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ABSTRACT

This compilation lists research completed in the areas of health, physical education, recreation, dance, and allied areas during 1984. The document is arranged in two parts. In the index, references are arranged under the subject headings in alphabetical order. Abstracts of master's and doctor's theses from institutions offering graduate programs in health, physical education, recreation, dance and allied areas are presented in the second section. The names of institutions reporting are also listed. (JD)

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In Health, Physical Education, Recreation & Dance

Including International Sources

VOLUME 27 1985 EDITION

COMPLETED RESEARCH

In Health, Physical Education, Recreation & Dance
Including International Sources

Covering Research Completed in 1984

Edited by PATTY S. FREEDSON for the RESEARCH CONSORTIUM of the AMERICAN ALLIANCE FOR HEALTH, PHYSICAL EDUCATION, RECREATION AND DANCE.

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American Alliance for
Health, Physical Education,
Recreation and Dance
1900 Association Drive
Reston, Virginia 22091
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Purposes of the American Alliance For Health, Physical Education, Recreation and Dance

The American Alliance is an educational organization, structured for the purposes of supporting, encouraging, and providing assistance to member groups and their personnel throughout the nation as they seek to initiate, develop, and conduct programs in health, leisure, and movement-related activities for the enrichment of human life.

Alliance objectives include:

1. Professional growth and development—to support, encourage, and provide guidance in the development and conduct of programs in health, leisure, and movement-related activities which are based on the needs, interests, and inherent capacities of the individual in today's society.
2. Communication—to facilitate public and professional understanding and appreciation of the importance and value of health, leisure, and movement-related activities as they contribute toward human well-being.
3. Research—to encourage and facilitate research which will enrich the depth and scope of health, leisure, and movement-related activities; and to disseminate the findings to the profession and other interested and concerned publics.
4. Standards and guidelines—to further the continuous development and evaluation of standards within the profession for personnel and programs in health, leisure, and movement-related activities.
5. Public affairs—to coordinate and administer a planned program of professional, public, and governmental relations that will improve education in areas of health, leisure, and movement-related activities.
6. To conduct such other activities as shall be approved by the Board of Governors and the Alliance Assembly, provided that the Alliance shall not engage in any activity which would be inconsistent with the status of an educational and charitable organization as defined in Section 501(c) (3) of the Internal Revenue Code of 1954 or any successor provision thereto, and none of the said purposes shall at any time be deemed or construed to be purposes other than the public benefit purposes and objectives consistent with such educational and charitable status.

Bylaws, Article III

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ABBREVIATIONS APPEARING IN THESES ABSTRACTS

AAHPERD = American Alliance for Health, Physical Education, Recreation and Dance (abbreviate all familiar organizations, e.g., AAU, NCAA, etc.)
acd = academic or academically
AD = athletic director
admin = administration
AE = absolute error
anal = analysis or analyses
ANCOVA = analysis of covariance
ANOVA = analysis of variance
assoc = association or associated
ATPase = adenosine triphosphate
BB = basketball
bf = body fat
BP = blood pressure
BTPS = body temperature pressure saturated
bw = body weight
C = centigrade
CA = chronological age
CE = constant error
CG = center of gravity
chem = chemical
chol = cholesterol
CO = county
CO_2 = carbon dioxide
coll = college or colleges
curr = curriculum
DBP = diastolic blood pressure
o = degree
DEPT = department
dev = develop or developmental
diff = difference, differences, differentiate or difficult
educ = education
EKG = electrocardiogram
ELE = elementary
EMG = electromyogram
EMR = educable mentally retarded
exp = experiment, experimental or experience
F = Fahrenheit, F ratio, female or females
fed = federal
FEV_1 = forced expiratory volume
fit = fitness

gm = gram
govt = government
gp = group
GPA = grade point average
gr = group
grad = graduate
HC = handicapped
HE = health education, health
HR = heart rate
ht = height
IEMG = integrated electromyographic activity
insig = insignificance or insignificant
IQ = intelligence quotient
JC = junior college
JHS = junior high school(s)
JV = junior varsity
kg = kilogram
kg/m = kilogram per meter
kpm/min = kilopondmeter per minute
KR = knowledge of results
LD = learning disability
lit = literature
M = mean, male or males
MA = mental age
max = maximum or miximal
meas = measure
mf = motor fitness
MMR = mildly mentally retarded
mph = miles per hour
MR = mental retardation
MS = middle school
msec = millisecond(s)
MT = movement time
mvmt = movement
n = number (e.g., of Ss) all numbers in arabic form (e.g., 1 = one, 5 = five, 100 = one hundred)
N_2 = nitrogen
natl = national
neg = negative
no. = number (in text, e.g., the total no. of days. . .)
O_2 = oxygen
% = percent
P = probability ($p<.05$ = significance greater than .05 level; $p>.01$ = nonsignificance at the .01 level)

PE = physical education
PH = public health
PR = pulse rate
prog = program
psi = pounds per square inch
pt = point
PWC_{170} = physical work capacity, PWC (level of HR unspecified)
Q = cardiac output
r = correlation
REC = recreation
rep = repetition or repetitions
RPE = rate of perceived exertion
RPP = rate pressure product
rpm = revolutions/min
RT = reaction time
RV = residual lung volume
S = subject, S's = subject's (possessive); Ss = subjects
SBP = systolic blood pressure
SD = standard deviation
SHS = senior high school(s)
sig = significant or significance
sq = square
st = state
stdnt = student
STPD = standard temperature pressure dry
SV = stroke volume
t = t-ratio
tchr = teacher
temp = temperature
TMR = trainable mentally retarded
TRT = total response time (RT + MT)
univ = university or universities
US = United States
USSR = Union of Soviet Socialist Republics
VE = variable error
V_E = expired ventilation
VO_2 = oxygen consumption
vol = volume
V_T = tidal volume
wt = weight
x = times
x^2 = chi square
YMCA = Young Men's Christian Association

YMHA = Young Men's Hebrew Association
YWCA = Young Women's Christian Association

NOTE:

1. Measurements are abbreviated (without periods) such as:
   in = inch; sec = second; wk = week; hr = hour;
   m = meter; ml = milliliter; mm = millimeter;
   min = minute; mo = month; oz = ounce; yd = yard, etc.
2. Whenever possible, performance tests are abbreviated (e.g., CPI = California Psychological Inventory; Cattell 16 PF = Cattell 16 Personality Factor Questionnaire; MMPI = Minnesota Multiphasic Personality Inventory)

3. U.S. Postal Service abbreviations are used for states (e.g., AL = Alabama)

INTRODUCTION

This compilation lists research completed in the areas of health, physical education, recreation, dance, and allied areas during 1984. It is arranged in two parts.

I. **Index.** In this section, references are arranged under the subject headings in alphabetical order. Instructions for using the index are given at the top of page 3.

II. **Theses Abstracts.** These are master's and doctor's theses from institutions offering graduate programs in health, physical education, recreation, dance, and allied areas. Institutions reporting are listed on pages 299 through 302. Most references are accompanied by abstracts of the research, and all are numbered in alphabetical order according to institution. Names of institutional representatives sending in theses abstracts are indicated in parentheses after the names of the institution; major professors are in parentheses after each reference.

Universities and colleges are encouraged to submit abstracts of theses completed at their institutions for inclusion in the next issue of *Completed Research*. Material should be sent to Patty S. Freedson, Chairman of Theses Abstracts.

Patty S. Freedson
University of Massachusetts
at Amherst
Editor, Completed Research

PART I — INDEX

This index enables the reader to refer to the items of completed research listed in the Theses Abstracts. Research topics are arranged in alphabetical order. The reference number following each topic corresponds to the listings of completed research dealing with that topic in the Theses Abstracts (Part II).

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APPALACHIAN STATE
NORTH CAROLINA

1. WARD, D. A. Anaerobic power gains in females as a result of weight training. M.A. in Physical Education, 1984, 58 p. (R. L. Johnson)

AUBURN UNIVERSITY (R. K. Means)
AUBURN, ALABAMA

2. BANSIL, C. K. Role of prostaglandins E and F2 Alpha in exercise induced delayed muscle soreness. Ph.D. in Physiology, 1984, 96 p. (G. D. Wilson)

An initial exp (exp I) demonstrated that plasma levels of PGEI increased along with muscle soreness (MS), established a method of inducing MS, and quantified MS by range of motion (ROM). In exp II, 22 male Ss were randomly divided into two groups (G1 and G2). Ss did 30 squats to induce MS and took aspirin (G1) or a placebo (G2). ROM was recorded, and blood was drawn pre-test, post-test and every 12 hrs for the next 72 hrs for RIA to determine prostaglandin levels. A repeated measures ANOVA with an appropriate follow-up test was used to determine if the changes were sig ($p < 0.05$). Plasma levels of PGE and PGF2 Alpha changed sig over time for G2 but not G1. ROM changes were sig in both groups with G1 being sig less sore. The changes in PGE and PGF2 Alpha had an inverse linear relationship to ROM in G2. The ratio of % change in PGE to % change in PGF2 Alpha peaked at 24-36 hr post exercise. It was concluded that PGE may act to promote MS. The delay in MS by 12-24 hrs post exercise may be related to the suppression of the proinflammatory action of PGE by PGF2 Alpha.

3. DIAMOND, S. J. A history of Drake Infirmary at Auburn University. M.S. in Health Education, 1983, 148 p. (R. K. Means)

The historical sig of Drake Infirmary in relation to the community of Auburn and the development of student health services at Auburn University was accomplished through the preservation of the testimonies of contributing individuals. Limited published and unpublished local materials were reviewed in order to develop an understanding of important past events and the social atmosphere in which they occurred. Taped interviews were conducted with 18 individuals sig to the study in their variety of experiences with student health services at Auburn University. Typed transcripts of the tapes were made to ensure that testimonies were preserved and accurate to the satisfaction of the individual interviewed. Factual information, trends and the social context in which events occurred were substantiated through the use of at least one other source. The health problems of the students and the community appeared to be most effectively solved when the health resources of both were shared. Problem solving, in relation to health, required participation and cooperation from members of both the university and the community in order to be successful. Health planning based only on the narrower historical perspective of one group or the other appeared much less successful.

ARIZONA STATE (C. B. Corbin)
TEMPE, ARIZONA

4. BYRNE, T. Stretching technique specificity: Shelton's active control stretch versus proprioceptive neuromuscular facilitation. M.S., 1984, 49 p. (L. Burkett)

5. FERNHALL, B. EEG alpha activity during maximal and submaximal exercise. Ph.D., 1984, 94 p. (W. Stone)

6. HILTY, B. The effect of deep and superficial heat application on isokinetic strength. M.S., 1984, 37 p. (L. Burkett)

7. MEDEIROS, M. M. The effects of a calcium-ion antagonist and nitroglycerin on patients with exertional angina pectoris. M.S., 1984, 90 p. (J. S. Skinner)

8. NORRID, B. A. A six-month study of adherence and compliance of participants in an exercise program. M.S., 1984, 68 p. (W. Stone)

9. ROBERTS, H. The effects of reward/no reward, success/failure upon intrinsic motivation. M.S., 1984, 137 p. (D. M. Landers)

10. WHITEHEAD, J. R. The development of multidimensional scales for the measurement of locus of control of reinforcement for physical fitness behaviors. M.S., 1984, 106 p. (C. B. Corbin)

BRIGHAM YOUNG UNIVERSITY (R. Conlee)
PROVO, UTAH

11. ALLEN, J. C. A descriptive study of participants who adhere to or drop out of fitness programs. M.S. in Physical Education, 1984, 104 p. (B. O. Jarman)

Questionnaires were sent to 321 participants in the McKay-Dee Hospital Total Fitness Program (Ogden, UT). Ss were McKay-Dee Hospital employees and spouses along with Weber State College faculty and spouses. A Discriminant Analysis indicated that several questions as a group correlated highly in classifying adherers and non-adherers. Results indicated that adherers had a higher level of education. Adherers felt more invigorated after exercising more often for a longer period of time. They set a specific time of day to exercise, felt guilty if a session was missed, set goals, and felt many positive outcomes from their fitness program. The major reason the Ss began a fitness program was to improve their fitness level. Poor time management was the obstacle overcome most by adherers in order to continue their fitness program. Most non-adherers discontinued their fitness program within six months because of distractions. Most Ss preferred to analyze their progress with a fitness leader through periodic testing and contracts, rather than to continue a nonsupervised fitness program.

12. BERRETT, M. W. Boys in dance: The presentation, analysis, and evaluation of a creative dance project. M.A. in Physical Education - Dance, 1984, 143 p. (P. C. Jacobson)

This project examined the effect a 10 wk creative dance treatment had on the attitudes of an existing class of 5th grade boys and girls toward dance, themselves, and those of the opposite sex, in a dance experience. The attitudes of an existing 4th grade all-boys remedial reading class were also examined on the same conceptual parameters. The study was specifically designed to research and report male participation and attitudes in dance. The data gathered from a semantic differential testing instrument revealed sig attitude changes among males in both experimental groups after treatment. The statistically sig changes in 14 variables, the marked changes in 6 variables, the written evaluation, and the verbal evaluation of the project all demonstrated a more positive attitude among the treatment 4th and 5th grade subjects towards dance, themselves, and those of the opposite sex in a dance experience.

13. BRADSHAW, P. A comparison of three modes of testing for improved max VO2 after the nautilus circuit weight training program. M.S. in Physical Education, 1984, 70 p. (R. K. Conlee)

This study determined the effects of Nautilus circuit weight training (CWT) on max VO2 when measured by either arm cranking (AC), leg cranking (LC) or arm-leg cranking (ALC). The training protocol was conducted 3 times a wk for an 8 wk period using Nautilus equipment and guidelines. Testing was performed on a Schwinn Airdyne cycle ergometer which allows both arm and leg cranking. Differences were detected between the AC and LC tests and AC and ALC tests in both groups, however there was no sig effect of CWT on max VO2 as measured by any of the 3 modes. With the lack of sig between the experimental and control groups for pre- and post-measures it is concluded that an 8 wk Nautilus CWT program does not sig alter aerobic capacity. It is possible that a longer training period (>8 wk) or an increased number of sets in the daily program may result in aerobic adaptations in novice subjects.

14. CALHOUN, M. L. A comparative analysis of the whip kick and the frog kick. Ed.D. Degree in Physical Education, 1984, 74 p. (W. Cryer)

The purpose of this study was to determine which of the two kicks (frog or whip) was most efficient in terms of force production, form drag, and distance attained per kick. A secondary problem was to determine if success at performing either kick could be predicted from selected lower body flexibility measures. 20 Ss (10 males and 10 females) were randomly selected from 3 colleges beginning swimming classes that had been instructed in the correct form for each kick. Lower body flexibility measures were taken on each S and the kicks were investigated by means of a tethered force production test, a form drag test, and a timed kick efficiency test. The data were analyzed by ANOVA and regression analysis. Some correlations were found between kick performance and lower body flexibility measures. It was determined that the frog kick was more efficient than the whip kick in terms of force production and distance attained per kick for beginning breaststrokers. It was also determined that the frog kick recovery position was very similar to the whip kick recovery position in terms of form drag produced.

15. CHAMBERS, R. S. Development of a submaximal arm test: Prediction of upper extremity VO2 max. Ph.D. in Physical Education, 1984, 69 p. (A. G. Fisher)

52 healthy male Ss (4 paraplegics) were used as an exp group to establish regression equations for the prediction of upper extremity VO2 max. An additional 25 Ss (3 paraplegics) were used as a validation group to either confirm or refute the validity of the equations. The Ss were given an arm cranking test to measure VO2 max. A submaximal test was also given which consisted of 3 6 min work loads (25, 50 and 75 watts). 3 multiple regression equations were developed for the prediction of VO2 max (L min^{-1}) using the sig independent variables of age, grip strength, pulse pressure, exercise HR and wt. The r values and SEE for equations 1-3 were (.73, .2498), (.76, .2403) and (.75, .2450), respectively. A paired t-test demonstrated that no sig difference existed between the actual and the predicted VO2 max ($p>.05$). % errors of prediction for equations 1-3 were 3.0, 2.0, and 1.9 respectively. An ANOVA test showed no sig differences among the predictions of the 3 equations ($F = 1.94$, $p > .05$).

16. DUFFY, D. J. The effects of acute and chronic consumption of Stim-O-Stam upon leg power and anaerobic endurance. M.S. in Physical Education, 1984, 41 p. (R. K. Conlee)

Stim-O-Stam is a commercial ergogenic aid purported to improve human performance by reducing recovery time and enhancing endurance. The tablets contain a mixture of sodium acid phosphate and potassium phosphate which could provide some buffering capability. In this study, 16 male PE students underwent acute (3 capsules 1 hr before exercise) and chronic (9 capsules per day for 6 days prior to exercise) consumption of Stim-O-Stam to determine its effect upon (1) leg power (1-min leg extension-flexion on

Cybex at 30^{o} /sec), (2) treadmill endurance time (214.4 m/min at 6% grade), (3) leg power 10 min after exhaustive leg work, (4) treadmill endurance time 10 min after an exhaustive treadmill run and VO2 max. Ss were tested under a double-blind crossover design. The results showed that there was no sig effect of acute or chronic ingestion of Stim-O-Stam on any of the four tests. Likewise, Stim-O-Stam had no effect on max VO2. These results do not support the claim of ergogenic benefits ascribed to this supplement.

17. JACQUES, J. C. Development of the Jacques Observation System of Hockey Programs and Facilities (J.O.S.H.). Ed.D. Degree in Physical Education-Sports, 1984, 220 p. (B. O. Jarman)

The purpose of this study was to develop the Jacques Observation System for Hockey Facilities (J.O.S.H.) which could be used to evaluate arenas for hockey. The J.O.S.H. was tested and found to be a valid and reliable means of collecting observation results. This descriptive system consists of 3 classifications, organized into 23 categories and 222 subcategories that include criteria of PE with a hockey perspective. The J.O.S.H. focuses on attaining sport setting criteria that have the potential to enhance high echelon quality hockey program. It is believed that the J.O.S.H. observation system design is simple to understand and apply. It combines managers', coaches', designers', and operators' concerns and enables data processing and recall of category concerns within and between classifications for interest groups. The J.O.S.H. can be used to collect descriptive information which could be potentially used by interest groups to provide guidelines for renovation and construction of hockey arenas. Additionally, this system has the potential to describe arenas for widely varied geographic locations.

18. JONES, G. D. The effect of mnemonic memory systems on selected boy scouts. M.A. in Recreation Management and Youth Leadership, 1984, 47 p. (T. Catherall)

This study determined if Boy Scouts using the mnemonic memory systems do better remembering facts, figures, dates and lists than those who do not use the programs. The statistical package Rummage was used to test the results of scores from a pretest and posttest. Results of the pretest and posttest indicated that Boy Scouts using the mnemonic memory programs scored sig higher than those scouts using rote memory. It is recommended that a memory merit badge be submitted to the leaders of the Boy Scouts of America.

19. KERNAN, J. N. A history of Brigham Young University men's cross country, and track and field, and an evaluation of program success 1960-1980. Ed.D. Degree in Physical Education, 1984, 230 p. (L. J. Silvester)

The purpose of this study was to document the history of Brigham Young University (BYU) Track and Field and Cross Country teams in intercollegiate, conference, national, and international competition for the years 1960 to 1980, and to grade the overall programs with NCAA institutions of similar size and stature in regards to success for the same time period. From 1960 to 1980, the Track and Field teams at BYU experienced their greatest amount of success in the history of the institution. There were various reasons for this, but primarily the success stemmed from increased funding, and the leadership of the coaching staff. In comparison to selected, elite NCAA Track and Field and Cross Country teams, BYU ranked 8th overall during the time period studied.

20. LORDS, C. M. *The effects of alignment and non-alignment of the temporomandibular joint on muscular strength, muscular endurance, and total body power.* M.S. in Physical Education, 1984, 51 p. (A. G. Fisher)

This study determined the effect of alignment and nonalignment of the temporomandibular joint (TMJ) on muscular strength, muscular endurance, and total body power. Alignment and nonalignment was accomplished using 4 different treatments. The TMJ was aligned using a temporary acrylic repositioning appliance (T1), the malocclusion was increased using a temporary acrylic repositioning appliance (T2), the S was asked to hold his teeth together in his normal bite (T3), and the S was asked to hold his teeth apart (T4). There were no differences in muscular strength, muscular endurance, or total body power between treatments. It was concluded that altering the alignment of the TMJ by improving the malocculsion does not improve muscular strength, muscular endurance, or total body power over nonalignment.

21. MADDEN, G. E. *Hemisphericity and relaxation in the learning of a motor skill.* Ed.D. Degree in Physical Education, 1984, 136 p. (C. McGown)

This study explored the relationship of hemispheric dominance on the learning of the volleyball forearm pass as taught by the Gallvey method or the progressive method (as presented in the United States Volleyball Association Level 1 Technical Module). This study additionally explored the influence of hemispheric dominance on relaxation and imagery techniques when used by skilled volleyball athletes. 122 Ss participated in exp 1: 82 students were left dominant and 30 students were right dominant. These Ss were further divided into 4 groups to be taught the Gallwey or the progressive method. No sig relationships were found between a student's brain dominance and either the Gallwey or Progressive method of teaching. In exp 2, 7 athletes who were left dominant and 10 athletes who were right dominant were further divided into 4 groups to be taught relaxation and imagery or act as a control group. No relationship existed between hemisphericity and the performance of skilled athletes using relaxation and imagery techniques when performing the forearm pass in competition.

22. MILLER, R. F. Character education and development of moral and spiritual values: Implementation in the Graduate Department of Physical Education-at Brigham Young University, 1979-1983. Ed.D. Degree in Physical Education-Sports, 1984, 195 p. (B. O. Jarman)

The purpose of this study was to determine whether immplementation of the institutional mission of Brigham Young University relative to the inculcation of character building and spiritual values, in combination with the traditional moral and character building goals and claims of the physical education profession is being treated with adequate emphasis in the Department of Physical Education-Sports at B.Y.U. The following conclusions were reached: The University and professional norm referents validated the contention that character education should be a focal point of emphasis in physical education. Graduate output did not address religious or moral/ethical concepts, and graduates did not express compunction to do so. The graduate faculty gave more attention to the goal of academic excellence than character, spiritual or social development.

23. MONTGOMERY, S. R. The effects of disciplinary policies upon parks and recreation employees. M.A. in Recreation Management and Youth Leadership, 56 p. (H. R. Gray)

This study focused on the individual perceptions and the degree of understanding of 345 park and recreation employees in the City of Norfolk, VA. A survey was ditributed to all employees (100% sample) on January 9, 1984, and included 3 levels of employees: General, Management, and Supervisory. The focus of the survey was on the effect of disciplinary policies upon city employees. Based upon the findings and limitations of the study, it was concluded that there was a sig difference in the effects of disciplinary policies among the 3 levels of employees in the Dept. of Parks and Recreation. There were sig differences between general employees and management employees regarding: (1) having a personal copy of city rules and regulations, (2) reasonableness of city rules and regulations, and (3) intimidation feelings of employees toward city rules and regulations. Management and supervisory employees were sig different regarding perceptions of : (1) having a copy of city rules and regulations as well as (2) always giving discipline to employees who violate rules and regulations. General employees and supervisory employees differed sig only in regard to the conciseness of writing of such city rules and regulations.

24. MOORE, R. A. An evaluation of computer camp curriculum. M.A. in Recreation Management, 1984, 69 p. (T. S. Catherall)

This study evaluated the direction of computer camp curriculum to determine the more successful patterns as deemed by the camp directors. The null hypothesis tested by this study was: there is not a curricular pattern for computer camps that is sig more successful than another. To test this hypothesis a mail questionnaire was sent out to 530 camp directors across the country. The directors were asked to rank their own participants success level for 19 different competencies. There were 120 directors who responded. The results of the questionnaire indicated that there was a definite curricular pattern for successful camps, which included the use of Apple computers, an average of 3 hrs per day on the computer and teaching advanced competencies.

25. MURRAY, J. P. C. The Decline of the Tragic Chorus. M.A. in Physical Education - Dance, 1984, 66 p. (P. C. Jacobson)

The purpose of this study was to substantiate a decline in the use of the tragic chorus during the 5th century. This was achieved by comparing the % of choral lines in each play of the 3 tragedian's--Aeschylus, Sophocles and Euripides. A critical analysis of the chorus in 1 representative play from each playwright shed some light on the pre-eminence of the choral lines within the play. The conclusion was that Aeschylian choruses did, in fact, have more lines within the plays than the latter choruses of the other 2 playwrights. This decline was somewhat less evident between Sophocles and Euripedes. The critical analysis showed a decline in choral effect on the action between the 3 playwrights. It was suggested in this study that such a decline was possible in light of the fact that the drama was moving ever closer to realistic portrayal of life situations. It was pointed out as well, that during these dramatic festivals about 20 dithyrambic choruses were seen, so a decline of choral importance within the tragedies was of less importance.

26. NEDDO, J. M. Effects of exercise on Type A behavior patterns. Ph.D. in Physical Education, 1984, 132 p. (R. Jones)

Using a controlled study, 80 college females who scored in the upper 25% of the Jenkins Activity survey modified for students were selected to determine the effects of aerobic dance on modifying the risk profile of cardiovascular heart disease in Type A individuals. The dependent variables were Type A, State and Trait anxiety, trait-anger, resting HR, and systolic and diastolic BP. The findings were: (1) there was a sig decrease in Type A scores in those Ss participating in aerobic dance; (2) there was not a sig difference in state-anxiety, trait-anxiety, or trait-anger; and (3) there was not a sig difference in HR, systolic, or diastolic BP; however, the exercise group showed the most improvement in resting HR and systolic BP.

27. OLES, G. W. A. Professionals' perceptions of pre-service training needs of BYU Survival staff. M.A. in Recreation Management and Youth Leadership, 1984, 67 p. (B. F. deHoyos)

The purpose of this study was to determine the perceptions of selected professionals with regard to the pre-service training needs of BYU Survival staff members. A survey was sent to former BYU Survival instructors who had continued their professional involvement in survival-type programs beyond their BYU Survival experience. The purpose of the survey was to determine which skills within the 5 categories of (1) leadership; (2) program logistics; (3) program safety; (4) technical skills; and (5) educational techniques, were perceived to be of greatest importance in the pre-service training of survival leaders. The major findings indicated that each of the 5 categories attained statistical sig. Of these categories, program safety attained the highest rating by the professionals. Moreover, specific skills within each category were determined to be important skills that should be taught in a pre-service training program. Plant identification, rock climbing, orienteering, New Games leadership, ropes courses, emergency procedures, wilderness medicine, and conservation education were among the more noteworthy skills that the professionals felt were needed in a training program for survival leaders.

28. PENROSE, K. W. Generalized body composition prediction equations for men using simple measurement techniques. Ph.D. in Physical Education, 1984, 80 p. (A. G. Fisher)

The purpose of this study was to derive a group of stepwise multiple regression equations to predict % fat, body density, and lean body weight in a normally distributed population of men with a wide range in age and actual % body fat. The prediction equations were developed using age, height, weight, and selected circumference measurements from a sample size for 143 men ranging in age from 22 to 81 yrs. A validation group of 109 men (23-74 yrs of age) was used to test the accuracy of these equations and the validity of 5 equations derived from previous research. 5 prediction equations were selected on the basis of high R values, low standard errors of the estimate, and a minimal number of variables. All of these equations accurately predicted body composition and were sig better than the 5 equations from the literature. Judging from the R values and standard errors of the estimate, it appears that equations predicting lean body weight are more valid than those predicting % fat and body density. Results verify the accuracy of the generalized prediction equations of the present study.

29. RICE, B. A. A study of common characteristics among women in higher educational administration of physical education and/or athletics. Ed.D. Degree in Physical Education-Sports, 1984, 72 p. (E. S. Roundy)

This study analyzed and compared characteristics among women in higher educational administration of physical education and/or athletics. The study group was women athletic directors or PE DEPT heads selected from schools designated as offering a 4 yr undergraduate program in PE and athletics. The control group was women PE teachers or coaches. Results indicated certain characteristics were common among women administrators in physical education and/or athletics. The most pertinent were: 1) Psychologically First Born--60% were psychologically first born, 2) Education Level of Parents--36% of the fathers had less than a high school degree compared to 28% of the mothers, 3) Undergraduate Major--88% majored in PE, 4) Marital Status--56% of the administrators were single, 5) Economic Background--94% were from the lower middle class and upper middle class.

30. ROBINSON, K. A. The relationship of premenstrual syndrome to self-esteem and GPA. M.S. in Health Sciences, 1984, 33 p. (R. L. Rhodes)

Research involving 212 women was conducted to determine the relationship of PMS to self-esteem and GPA. Data obtained were analyzed and a strong correlation between PMS and self-esteem was indicated. However, no sig difference was seen between the GPA's of women in the PMS category and the GPA's of women in the non-PMS category. The incidence of PMS in the sample population was 48%, and 70% of the women in the PMS category had low self-esteem. Other factors, such as exercise, mental health of the S's mother, and stress were also studied.

31. ROMINE, J. N. Eugene Lusk Roberts: A protagonist of character development. Ed.D. Degree in Physical Education, 1984, 579 p. (D. D. Shaw)

The purpose of this study was to present and interpret sig data regarding the personal and professional contributions of Eugene Lusk Roberts. An extensive review of literature, personal interviews, and biographical data form comprised the primary source data. An examination of text books, newspaper and journal articles, and historical records, constituted the secondary source input. The data were compile, classified, and interpreted according to the purpose of the study. The following conclusions were made: 1) The contributions of Eugene L. Roberts were sig in education through the physical medium, 2) Eugene L. Robert's contributions sig effected the lives of his students, employees, associates, ad family members, and 3) the communal effects of Eugene L. Robert's contributions were sig.

32. STERNER, M. J. Nutritional knowledge of wrestlers and wrestling coaches in the state of Minnesota. Ed.D. Degree in Physical Education-Sports, 1984, 150 p. (E. Roundy)

This study investigated the nutritional knowledge and sources of knowledge for wrestlers and coaches in 165 randomly selected SHS's and 20 4 yr colleges in the state of MN. Each school was sent nutrition questionnaires designed by Marjorie Cho and Beth Fryer of the Nutrition DEPT of Kansas State University. Each varsity wrestler and coach was asked to complete the questionnaire. 24% of the SHS's and 50% of the colleges returned the data. Comparisons were made of the knowledge of elite, non-elite wrestlers and coaches of both the SHS's and colleges. The MN study was compared with the Cho study. The following conclusions were made: (1) SHS non-elite wrestlers had lower scores than the other subgroups. There were no differences among the other subgroups, and (2) the first 3 sources of nutritional knowledge were (a) high school courses, (b) coaches, and (c) parents.

33. STUART, D.W. The effect of hydrostatic weighing protocols on body density measurement. Ed.D. Degree in Physical Education, 1984, 101 p. (A. G. Fisher)

16 Ss were tested on 9 different days to compare the effect of 3 hydrostatic weighing (HW) protocols on body density (D_b). Each S was hydrostatically weighed 9 times each test session: 3 times with the lungs empty (HW-RV); 3 times with the lungs partially emptied (HW-FRC); and 3 times with the lungs completely full of air (HW-TLC). Land (RVL) and water (RVW) residual volume measurements were also made each test session. Sig differences in D_b were observed using the 3 different protocols (M D_b = 1.0433g/ml for HW-RV; 1.0462 g/ml for HW-FRC; and 1.0484 g/ml for HW-TLC), and as a result of using RVL and RVW (M D_b = 1.0434 g/ml for RVL and 1.0411 g/ml for RVW) ($p<0.05$). Although statistically sig, these differences had little practical sig when used in body fat computations. Since HW-FRC values fell between those of the other 2 protocols, this technique might be recommended as it also eliminates some problems associated with the other protocols. Due to possible gas trapping associated

with the water RV measurements, land measurements are recommended.

34. SUMMERS, C. T. The incidence of obesity in LDS college women: The effect of selected physical socio-environmental variables on total percent body fat in two populations of LDS women. M.S. in Health Sciences, 1984, 40 p. (R. Burgener)

The sample population consisted of single, LDS, white women attending Brigham Young University (BYU) and California State University at Fullerton (CSUF). Sig data as well as trends that appeared were included in this study. From the data collected, it was concluded that the sample populations at BYU and CSUF were the same. The incidence of obesity was determined only among individuals attending both universities. The entire sample population M was 22.19%. This % did not meet the obesity criteria. Analysis of data indicated a high correlation ($p<.05$) between total % body fat and the variable of age, ht, and wt.

35. SUMMERS, M. B. Free fatty acid oxidation in obese and non-obese females and its response to aerobic exercise training. Ph.D. in Physical Education-Sports, 1984, 69 p. (A. G. Fisher)

The purpose of this study was to determine if differences existed between obese and non-obese females in the activity of the beta oxidation enzyme 3-hydroxyacyl-CoA dehydrogenase (HAD), and to determine the effects of aerobic exercise training on HAD. HAD activity was determined from muscle biopsies of the vastus lateralis prior to and after a 15 wk stationary bicycle ergometer exercise program for 11 obese and 12 non-obese females, ages 18-35. Obese and non-obese control, low, and moderate aerobic intensity exercise groups were randomly assigned, and wt, % body fat, skinfold, and VO2 max measurements were also made. No sig difference in HAD activity between the obese ad non-obese was found, but a sig increase in HAD activity for the obese was seen as a result of the aerobic training program at 70% VO2 max (moderate) ($p<0.05$). Sig increases in VO2 max occurred in both groups. It was concluded that obesity cannot be attributed to a deficiency in the enzyme HAD and that moderate aerobic exercise can sig enhance FFA oxidation.

36. THOMAS, E. L. Comparison of high fat diets, low fat diets, and exercise on predicted fat loss of overweight women. M.S. in Physical Education, 1984, 106 p. (A. G. Fisher)

36 healthy overweight women were placed into 4 exp groups with the same caloric deficit: an ad libitum low-fat diet (less than 20% total calories) plus exercise (LFX), a high-fat (greater than 40% total calories) diet with exercise (HFX), a sedentary low-fat diet (LF), and a sedentary high-fat diet (HF). All groups were assigned the same deficit for the duration of the study. Ss were tested before and after the 12 wk exp period for predicted max VO2, and body composition. Both exercise groups demonstrated a sig ($p<.05$) increase in max VO2, and all 4 groups had a sig fat loss over time ($p<.05$). However, the fat loss for the LFX group was sig better than the other groups and only the LFX group displayed a sig greater potential for accurately predicting fat loss. A summary of results appears to indicate that when caloric deficits are held equal, an ad libitum low-fat diet combined with an aerobic exercise program yields a sig greater fat loss, allows a greater increase in max VO2, and predicts more accurately the actual fat loss than the other 2 calorically restricted diets.

37. WHITE, N. D. Therapeutic recreation practitioners in clinical and community settings: A comparative study of philosophy, job competencies and professional affiliations. M.A. in Recreation Management and Youth Leadership, 1984, 78 p. (H. R. Gray)

A completed survey questionnaire was received from each of 57 clinical and 34 community practitioners which verified the strata and addressed demographics, job competencies, philosophy, and state and national affiliations. Data analysis and test of the hypotheses revealed sig differences in 14 out of 34 practitioners at the .05 level of sig or better. Overall, however, there were no sig diffences found with regard to the philosophy, job competencies and professional affiliations of clinical and community therapeutic recreation practitioners.

CALIFORNIA ST. UNIV., DOMINGUEZ HILLS (M. H. Frank)
CARSON, CALIFORNIA

38. HARMATZ, M. M. Healthful Living Manual. M.A. in Education with Emphasis in Physical Education, 1983, 64 p. (C. S. Casten)

The Healthful Living Manual is a workbook for a university level Healthful Living class. The units included in the manual are: (1) What is Healthful Living?, (2) Physical Fitness Evaluations, (3) Social, Emotional and Psychological Fitness, (4) Nutrition, (5) Cardiovascular Endurance, (6) Strength and Muscular Endurance, (7) Flexibility, and (8) Putting It All Together: A Personal Fitness Program. Upon completion of the manual and the class, the student will: (1) be able to design and monitor their own personal fitness program and (2) have been made aware of the beauty and wonder of life so that they will better appreciate their body and mind. Included in the units are study guides, puzzles, charts, quizzes and suggested activities emphasizing the various components of physical fitness and healthful living.

39. WALKER, D. R. Philosophy of sport. M.A. in Education with Emphasis in Physical Education, 1983, 64 p. (R. A. Pestolesi)

The purpose of this study was to investigate the relationship between coaches' philosophies and their success as a coach. The sample consisted of 100 coaches in the Los Angeles County area. A questionnaire was used to determine a general philosophy of sports of the coaches surveyed, for example, whether they were: (1) An existentialist, (2) An idealist, (3) A naturalist, (4) A pragmatist, or (5) A realist. The findings from the questionnaire indicated that there was sig difference between coaches with a realistic philosophy and coaches with an idealistic philosophy. Specifically, winning coaches were mostly in the category of realism, while most of the losing coaches were in the category of idealism. There was a small % of winners and losers in the categories of existentialism, naturalism, and pragmatism - followed by the eclectic category which indicated that there were more losers than winners.

CALIFORNIA STATE UNIVERSITY, HAYWARD (R. Riveness)
HAYWARD, CALIFORNIA

40. STEDMAN, R. M. Professional baseball and the antitrust laws: An arbitrated impasse? M.S. in Physical Education, 1984, 173 p. (S. Clark)

This study traces the reserve clause through 100 yrs of judicial, legislative, and arbitral controversy. Baseball is an anomoly; all other professional sports have been held subject to antitrust laws. The reasons for and the effects of this exemption are discussed.

CALIFORNIA ST. UNIVERSITY, LONG BEACH (D. Deatherage)
LONG BEACH, CALIFORNIA

41. CHAPMAN, L. A. Psychological effects of steroid use by male bodybuilders. M.A. in Physical Education, 1984, 132 p. (W. Sinclair)

The purpose of this study was to determine sig differences in the personality traits between a Normative Population, and bodybuilders identified as anabolic steroid users or non-users. 64 volunteer male Ss participated in the study by completing Cattell's Sixteen Personality Factor Questionnaire. Statistical comparisons were made on each of the 16 PF traits. Sig diffs were found among the 3 exp groups on 4 of the 16 factors. Those factors which showed sig were: warmth, boldness, suspiciousness, and tough-poise. A one mean t-test was used to find sig diffs between each exp group and the Normative Population. Bodybuilding steroid users were sig diff on 8 factors. Bodybuilders abstaining from steroid use differed sig on 9 traits and the non-bodybuilder and non-steroid user differed on 6 traits compared to the Normative Population.

42. CREIGHTON, C. A. Women and distance running: self perceptions of personal growth and commitment. M.A. in Physical Education, 1984, 201 p. (M. Clifton)

It was the purpose of this investigation to obtain information from women runners (age 30 yrs and older) which measured the runners self-perceptions of personal growth and level of commitment to running. Results indicated the following: (a) women runners identified running as facilitating their personal growth as expressed by Personal Growth Score; (b) women runners identified running as highly valued in their lives as expressed by Commitment to Running Score; (c) women runners with higher weekly mileage and who had been running longer identified running as effecting more positive change and were more highly committed to running; (d) age was not a factor in predicting either Personal Growth or Commitment to Running Scores; (e) there was a positive correlation between personal growth and commitment to running; (f) the Personal Growth Scale is a valid tool for measurement in an area of the psychology of running which has previously been without instrumentation.

43. HICKS, T.A. Historical background to Olympic demonstration baseball. M.A. in Physical Education, 1984, 86 p. (T. Morgan)

For the sport of baseball, inclusion as a demonstration sport in the Olympic Games is a fabulous and well-earned honor. It took many hrs of dedicated, conscientious, and at times tedious work of loyal individuals and organizations to reach this goal. The purpose of this study was to examine in precise terms the historical background of world amateur baseball, how baseball became a 1984 Olympic demonstration sport (years 1978-1981), and baseball's scheduled involvement in the Olympic Games. A discussion of the major groups and individuals involved in baseball becoming a demonstration sport, the guide-lines set forth by the International Olympic Committee (IOC) for Olympic sport recognition, reasons why baseball deserved to become an Olympic demonstration sport, and the guidelines and structure to the format for the Olympic baseball tournament of 1984 are presented.

44. MARION, S. E. A study to determine the courses important for a women's gymnastics club coach/director curriculum. M.A. in Physical Education, 1984, 117 p. (T. Morgan)

The purpose of this study was to determine the appropriate coursework in a model curriculum designed to prepare students for professional positions as women's gymnastics club coach/director specialists. A 195-item questionnaire was sent to a total of 100 club and collegiate women's gymnastics coaches and/or directors. Results of this study identified 7 community gymnastics needs. 28 skills and knowledges and 37 courses were chosen as top priorities in the professional preparation of the women's gymnastics club coach/director specialists. The courses were all within the PE DEPT with the exception of 1 course in nutrition. The PE courses ranged from the traditional course offerings to extensive spotting, technique, analysis and fieldwork courses in gymnastics. The curriculum was strongly experientially oriented with heavy emphasis in fieldwork experience throughout the entire time of professional preparation.

45. MORGAN, D. T. The effect of mental rehearsal prior to and following practice on the performance of a coincidental-timing task. M.A. in Physical Education, 1984, 82 p. (W. Husak)

The effect of mental rehearsal when scheduled prior to and following practice on the performance of a coincidental-timing task was investigated with 18 PE majors at California State University Long Beach in a 6 wk testing period. Ss were randomly assigned to 1 of 3 groups: pre-practice imagery, post-practice imagery or control (which did not use imagery). The results indicated sig trials, sex and groups by speed by trial effects in the performance of the task. As no group or groups by trial effects were found, the research hypothesis that mental practice both prior to and following physical practice was more beneficial than physical practice alone was rejected. The results demonstrated support for the cognitive symbolic and improved memory mechanism theories of mental practic effects. Practical implications of the results and possible future directions of research were discussed.

46. POTO, C. C. Effect of ball velocity on spatial accuracy of the tennis volley. M.A. in Physical Education, 1984, 68 p. (W. Husak)

The term coincidental timing describes a S's ability to initiate and execute a response that coincides in time and/or space with a moving stimulus object. Research in non-sport settings has indicated that coincidental timing accuracy improves with increases in stimulus velocity. This study examined the effect of ball velocity on spatial accuracy of the tennis volley, to determine whether improvement in timing associated with stimulus velocity remains evident in a sport skill requiring both coincidental timing and aiming. Results indicated that Ss became less accurate in placing their volley on a target as ball velocity increased. Improvement in timing was not revealed in target scores. Determining whether this was due to perceptual or response factors or another factor such as practice requires further study.

47. SALO, D. C. The effects of sprint-swim training upon freestyle racing performance at 25, 100, and 500 yards. M.A. in Physical Education, 1984, 47 p. (J. Mastropaolo)

This study was intended to investigate the effects of sprint-swim training upon freestyle racing performance of a single S for 25, 100, and 500 yds. Pretesting was to occur at these distances until confirmed steady state was attained, whereupon the exp training protocol was to be introduced. A confirmed steady state did not occur following 10 wks of pretesting and the study was terminated. In addition to conducting weekly time trials, "dummy training" bouts were completed daily, consisting of 60 25-yd sprint swims with 45 sec recovery between swims. The data presented are the results of 10 wks of pretesting and "dummy training." The S improved sig ($p<0.05$) for 100 and 500 yds but not for 25 yds from wks 1 to 10. M performance times improved 13.58% and 11.06% respectively for 100 and 500 yds, and only 0.59% for 25 yds from wks 1 to 10.

48. WHITEHEAD, L. D. Evaluation of a selected choreographed exercise program. M.A. in Physical Education, 1984, 214 p. (R. Lindsey)

This study evaluated the record Believercise (DST-4108), an exercise sequence choreographed to contemporary gospel music. A kinesiological analysis of major exercise from 11 routines was conducted. Using a deductive analytic approach, the safety and fitness values of 32 exercise were ascertained. To assess the program as a means of cardiovascular conditioning, 49 university students ages 18 to 32 monitored their own pulse rates while exercising. Based on data collected, calculations were made to determine the % of Ss that fell below 70%, within the 70-85% range, or above 85% or the age-based maximum HR. Findings revealed that this exercise sequence may safely contribute to the maintenance or increase of the neuromuscular endurance of most major muscle groups as well as the maintenance of joint flexibility for healthy university students. However, for these Ss, this program did not meet the criteria for development of cardiovascular endurance.

CALIFORNIA STATE UNIVERSITY, SACRAMENTO
SACRAMENTO, CALIFORNIA

49. ENGLESE-DELLASERRA, F. A comparison between accumulated playing time and academic performance among female high school basketball players. M.A. in Physical Education, 1985, 100 p. (S. K. Figler)

This study determined whether the degree of team involvement, measured by playing time, influenced the academic performance of HS varsity female basketball players within the Metropolitan League of Sacramento, CA. Ss (n=36) were divided into "regular" and "non-regular" groups based upon the no. of mins played during the first 20 games of the 1982-1983 season. Data collected from 8 schools included game statistics books, interscholastic sports teams records, academic records, quarter report cards and lists of course requirements. Academic performance was assessed by a comparison of 11 GPA (cumulative, in-season, out-of-season, required course, elective course, math, history, PE, English, social science and science) and 10 course load (average no. of elective and required courses among groups and within each of the 4 class levels) hypotheses between "regular" and "non-regular" players. Results of the Mann-Whitney Rank Sum Test indicated "regular" players scoring sig higher (p=.05) than "non-regulars" in the elective course GPA. "Non-regular" players scored sig higher (p=.05) in the average no. of elective and required courses taken. Results led to the conclusion that degree of team involvement had an influence upon the academic performance of athletes in only 3 of 21 GPA comparisons.

CENTRAL MISSOURI ST. UNIVERSITY (M. Lyon)
WARRENSBURG, MISSOURI

50. CRUMPLER III, H. A survey to identify the course content for largemouth bass fishing in midwest reservoirs. M.S.Ed. in Physical Education, 1984, 78 p. (R. N. Tompkins)

Questionnaires were sent to 29 professional bass fishermen and 22 fishery biologists concerning knowledges and skills necessary to catch more and larger bass. Results indicated that course content should include home habitat, water temperature range, pH level, 02 content, mating habits, movement patterns, feeding patterns, weather influence and water clarity. Equipment covered should include fishing line, polaroid glasses, depth finders, structure maps, graphs, temperature gauges, pH and oxygen monitors, compass and lures. Skills taught should include bank reading, water reading and use of trolling motors, rods, and reels.

51. KIM, K. H. The effect of three striding techniques on the velocity of a batted baseball. M.S. in Physical Education, 1984, 40 p. (R. N. Tompkins)

21 college varsity baseball players batted 5 balls from a batting tee using each of 3 striding directions, open, parallel, and closed. A sports radar gun was used to determine the velocity of the batted balls. ANOVA and Tukey's Honestly Sig Diff Test were used to test for sig at the .05 level. Sig diffs were found between velocity resulting from the open (M = 77.25) and parallel (M = 78.40) strides and the open and closed (M = 79.32) strides. The diff between the closed strides was not sig.

52. MONROE, M. A comparison of the effects of static and proprioceptive neuromuscular facilitation flexibility training on active hip and trunk flexion. M.S. in Physical Education, 1984, 54 p. (B. J. Bailey)

31 male college athletes were randomly assigned to 2 groups. Group 1 (static stretch) performed a slow-sustained stretch to the limits of motion and/or slight discomfort and held the position for 6 sec. Group 2 (PNF stretch) performed a slow sustained stretch to the limits of motion and/or slight discomfort and executed a 6 second isometric contraction in the opposite direction of the stretching motion. Both groups performed the stretch exercise 3 times each Mon. Wed. and Fri. for 8 wks. The Leighton Flexometer was used to measure flexibility. Both groups improved sig in active hip and trunk flexion. ANOVA indicated that there was no sig diff in the effectiveness of the 2 programs.

CENTRAL STATE UNIVERSITY (H. L. Coker)
EDMOND, OKLAHOMA

53. RILEY, J. W., II. A comparison of the angle of the knee and knee laxity. M.Ed. in Physical Education, 1983, 178 p. (V. L. Peters)

The primary purpose of this study was to determine if there was a sig relationship between the angle of the knee and knee laxity. The study utilized 25 female and 27 male university students as Ss. The angle of the knee was determined for each S by measurements on 3 photographs taken of 3 separate specified poses to depict differenct angles of the knee. The measurements of medial and lateral knee laxity of the right and left knees were obtained by use of laxity testing apparatus. The apparatus was designed and constructed utilizing principles from previously designed machines. All null hypotheses were accepted as none showed sig relationship at the .05 level of confidence. There was no sig relationship between knee laxity and angle of the knee for any of the Ss, female or male. There was no sig relationship between the length of the femur and knee laxity or the angle of the knee. There was a sig relationship between the no. 2 angle of the right knee and the right lateral knee laxity for all the Ss. There was a sig relationship between the female and male Ss with regard to angle 3 of the left knee.

CHADRON STATE COLLEGE (T. P. Colgate)
CHADRON, NEBRASKA

54. DORSHORST, P. J. An analysis of educational attainments of athletes at Chadron State College. Masters in PE, 1983, 82 p. (T. P. Colgate)

An investigation of educational attainment of athletes as compared to nonathletes at Chadron State College was made. A sample of 4,978 athletes which matriculated at Chadron State from 1972 through 1982 was drawn. A comparative analysis of M scores on various populations of the 2 classifications (athletes vs. nonathletes) yielded that: college graduation percentages were higher for athletes than nonathletes; athletes required a greater no. of yrs to graduate than nonathletes; the majority of athletes acquired degrees in PE while the majority of nonathletes acquired degrees in business; athletes in individual sports had the highest M GPA of all athletes and nonathletes; and that the freshmen yr and spring semester were the most frequent periods of withdrawal. Statistical analysis of data determined that the number of athletes that graduated was sig higher than the number of nonathletes which graduated.

55. STUMF, R. M. An investigation of selected personality traits of junior high school students. M.S. in Education, 1982, 78 p. (T. P. Colgate)

The Gordon Personal Inventory was administered to 780 JHS Ss to determine if there was a statistically sig diff in personality traits of male and female students that participate in team sports, those that participate in individual sports, and nonparticipants. The dependent variables included: cautiousness, original thinking, personal relations and vigor. Independent variables were sport, sex, grade and interactions of the 3. Individual 3-way ANOVA was computed on each of the dependent variables to determine the statistically sig F-values. Ss t-tests were then done on all possible source combinations of the sig F-values. The conclusions included: no statistically sig diff in cautiousness, original thinking and personal relations in those in teams sports, individual sports and nonparticipants; there were statistically sig diff between team sport participants and nonparticipants, individual sport participants and nonparticipants, but not between team sport participants and individual sport participants on the personality characteristic vigor.

TEACHERS COLLEGE, COLUMBIA UNIVERSITY (B. Gutin)
NEW YORK, NEW YORK

56. BREHM, B. A. Recovery energy expenditure for steady state exercise in runners and nonexercisers. Ed.D. in Movement Science and Education, 1983, 140 p. (B. Gutin)

This study examined the effects of intensity, mode of exercise, and aerobic fitness on recovery VO2 (rec VO2) following a constant amount (2 mi) of steady state work. 8 runners (4 M, 4 F:22-32 yrs) walked at 2 and 4 mph and ran at 5 and 7 mph (18, 33, 50, and 68% peak VO2). 8 sedentary adults (4 M, 4 F:21-33 yrs) completed the 4 mph test. For the runners, net rec VO2 for 2, 4, 5 and 7 mph work was (M ± SEM) 12.52 ± 3.00, 29.53 ± 5.41, 28.64 ± 2.91, and 44.27 ± 5.32 ml/kg, respectively, for the recovery period (18-48 min). An ANOVA for repeated measures showed that rec VO2 was greater ($p<.05$) for the higher intensity. No sig diff between runners and nonexercisers were found for rec VO2 after 4 mph walking (29.53 ± 5.41 and 35.09 ± 9.39 ml/kg). Statements attributing substantial energy expenditure to the recovery period may be misleading to people exercising at work levels similar to those described in this study since the recovery energy expenditure only amounted to about 3-17 kcals.

GEORGE WILLIAMS COLLEGE (M. T. Thompson)
DOWNERS GROVE, ILLINOIS

57. ATTENBOROUGH, P. G. Synchronization of inspiration and expiration with stepping frequency during treadmill exercise. M.S. in Exercise Physiology, 1984, 77 p. (R. D. Wurster)

14 females and 6 males, age 22-32 (M = 26), were studied while walking and/or running on a treadmill. Each S participated in 2 exercise protocols. During Protocol A, exercise intensity was increased by increasing treadmill speed whil elevation remained constant. During Protocol B, exercise intensity was increased by increasing treadmill elevation while speed remained constant. Synchronization between the respiratory and step cycles was examined using a cross correlation technique. When the cross correlation of inspiration with step was examined, 45% of the Ss showed a strong correlation at at least 1 level of exercise. When the cross correlation of expiration with the step cycle was examined, only 30% of the Ss showed a strong correlation at at least 1 level of exercise. However, diff between the inspiratory and expiratory data were not found to be statistically sig. This study demonstrates that inspiratory and expiratory events are entrained to a similar degree by the stepping frequency. A simple model is presented to explain a possible pathway by which afferent input from working muscle may influence the timing of the respiratory cycle.

58. BUCKLEY, B. S. Perceived exertion associated with work in air and water. M.S. in Exercise Physiology, 1984, 184 p. (W. E. Langbein)

This study examined differentiated ratios of perceived exertion and thermal sensation during submax and max levels of exercise in air and water. 14 healthy male Ss (M age, 24.4 yrs; 9%-21% body fat, M = 12.9%) completed 2 max work tests on a bicycle ergometer designed to operate in air and water. Differentiated ratings of perceived exertion (RPE), ratings of thermal sensation, HR, VO2, respiration rate (RR), core temperature (tympanic - T_{ty}), M skin temperature (MST), and forehead temperature (T_{fh}), were measured throughout the tests. HR, RR, oxygen pulse, MST, T_{ty}, and T_{fh} were sig lower in water with no sig diff between VO2 in the 2 environments. Body weight loss was greater in air. Differentiated ratings of RPE were overall sig greater in air but post hoc procedures revealed no sig diff in ratings between environments at comparable relative workload intensities. The same pattern was seen with the thermal sensation ratings. Analysis of the post exercise interview revealed 75% and 100% of the Ss chose "tired legs" in both air and water as the principal perceptual cue, with no thermal sensation cue more sig than another. The data suggested that even with the alterations of physiological responses to work, Ss were, overall, able to perceptually detect the diff between air and water at comparable relative work intensities.

59. BUSHMAN, M. The effects of the Pritikin diet on healthy, exercising men. M.S. in Exercise Physiology, 1983, 83 p. (M. Firlitt)

This investigation studied the effects of the Pritikin Diet on selected blood serum levels, body composition, and BP in healthy, exercising men. The M ages of the exp group (Dieters, N=10) and control group (N=10) were 46.0 and 45.6 yrs, respectively. Ss were involved in regular, aerobic exercise prior to and during the exp. M data of Dieters showed sig decreases in serum levels of cholesterol, triglyceride, and uric acid, in total body wt, and in % body fat after 4 wks of the dietary regimen. Similar sig was seen at 8 wks with the exception of triglycerides. Dieter serum HDL-lipoprotein and lean body mass did not change over the 8 weeks. Compared to Controls, Dieters showed lower serum glucose and cholesterol, total body wt, % body fat, and systolic and diastolic BP at adjusted post-diet values. Post-diet serum sodium and potassium levels were within normal limits though potassium was sig lower in Dieters.

60. BUYZE, M. T. Comparison of training adaptations from jogging, rope skipping, and running. M.S. in Exercise Physiology, 1984, 43 p. (P. Healey)

It has been suggested that 10 min of rope skipping is equal to 30 min of jogging. This investigation compared selected physiological adaptations in response to a 6 wk program of jogging, rope skipping, and running. 36 sedentary volunteers (25 females, 11 males) age 18-35 yrs were assigned to one of the following groups: jogging (n=9), rope skipping (n=10), running (n=10), or control (n=7). Training was conducted 5 days per wk for 6 wks. Joggers trained for 30 min at 5-7.5 mph, rope skippers for 10 min at 50-140 rpm, and runners for 10 min at 6.0-8.4 mph. The intensity of running and rope skipping were similar. Sig diff ($p<.05$) in VO2 max, max pulmonary ventilation and treadmill test time were observed between the control and each of the training groups. VO2 max increased 5.1 ml/kg/min for the jogging group (13%), 3.8 ml/kg/min for the running group (11%), and 2.8 ml/kg/min for the rope skipping group (7%). Rope skipping and running groups had higher injury and dropout rates than jogging or control groups. It was concluded that 30 min of jogging tends to elicit a higher aerobic response than either 10 min of rope skipping or running.

61. CHRISTIAN, B. J. The effects of water ingestion on plasma volume shift during a 10 K run. M.S. in Exercise Physiology, 1983, 82 p. (P. Healey)

The purpose of this study was to observe effects of water ingestion on 6 physiological variables (VO2; HR; BP; % change in plasma volume, skin temp; and rectal temp) during a 10 kilometer run. 10 males between the ages of 21 and 27 yrs served as volunteer Ss. Each S performed 3 continuous treadmill tests within a 3 wk period: (1) max treadmill test (2) submax 10 kilometer run without water ingestion and (3) submax 10 kilometer run with water ingestion. A correlated ANCOVA was used to test for the effects due to variations in treatment conditions at 6 collection times. Results indicate that VO2, BP, skin temp, and rectal temp were not dependent on water ingestion during the 10 K run. However, a sig % increase in a physiological variable was observed at the 45 min mark during the 10 K trial without water ingestion. This is suggestive of an increase to the entrance of extravascular protein into the blood by way of the lymphatic system. The mechanism for this entrance was assumed to be promoted by muscular contraction and tissue movement. HR at rest showed a sig decrease after ingestion of 17 oz. of water. This suggests that a baroreceptor reflex was responsible for the decreased HR prior to the 10 K with water ingestion trial. Greater control of both ambient temp and hydration levels is indicated for future research into the effects of water ingestion at the 10 K distance.

62. DAL POZZO, M. S. Comparison of energy expenditures, cardiovascular responses and ratings of perceived exertion on a treadmill and a mini-trampoline. M.S. in Exercise Physiology, 1984, 93 p. (P. Healey)

This study was designed to directly compare the energy expenditures, cardiovascular responses and rating of perceived exertion for equivalent amounts of work performed on a treadmill and mini-trampoline. Ten healthy, male graduate students aged 23-32 participated. A max VO2 test performed on the treadmill and 4 submax VO2 tests, 2 on the treadmill and 2 on the mini-trampoline, were administered to each S. Correlated "t" tests and ANOVAs were used to evaluate the parameters of the study. A 2X6 (treadmill/mini-trampoline by time) factorial analysis was employed. Newman-Keuls post hoc analysis was utilized to determine sig. There were sig diff between work performed on the treadmill and that performed on the mini-trampoline in energy expenditures ($p<.01$) at both work intensities (4.0 mph and 6.5 mph), sig diff in systolic BP ($p<.05$ at 4.0 mph, $p<.01$ at 6.5 mph), sig diff in systolic HR ($p<.05$ at 4.0 mph, $p<.01$ at 6.5 mph), and sig diff in local ratings of perceived exertion ($p<.05$ at 6.5 mph). In all sig diff, the M values were lower on the mini-trampoline. It was concluded that exercise on a mini-trampoline resulted in lower physiological and psychophysiological work when compared to equivalent work (as determined by step cadences) on a treadmill.

63. DIXON, M. L. The combined effects of theophylline and progressive inspiratory resistive exercise on individuals with chronic obstructive pulmonary disease, unresponsive to broncodilatation. M.S. in Exercise Physiology, 1984, 56 p. (M. Firlitt)

The purpose of this investigation was to determine if theophylline in combination with progressive inspiratory resistive exercise could be of benefit to individuals with chronic obstructive pulmonary disease who are unresponsive to bronchodilators. The exp group ($n=8$) received theophylline twice a day and performed progressive inspiratory resistive exercises 3 times a day for 15 min a session. The control group ($n=2$) did not recevie theophylline and performed only nonprogressive inspiratory resistive exercises. The training period consisted of 8 wks after which the exp group sig improved on the following parameters: FEV_1 ($p<0.05$); submax VO2 at 50 watts ($p<0.005$); and distance walked in 12 min ($p<0.005$). Max VO2 increased in 6 of 8 patients, however, this was not sig. The control group did not obtain any sig improvement in FEV_1, submax or max VO2, and both individuals decreased the distance traveled in 12 minutes. ANCOVA was used in determining sig in lung volumes and capacities; whereas other tests were used to determine sig in all other parameters. Findings indicated that patients with fixed airway obstruction and symptom limited exercise performance may improve both exercise efficiency and pulmonary function (FEV_1) after an 8 week program consisting of theophylline and inspiratory muscle training.

64. GASPEREC, S. B. Team cohesiveness and its relationship to performance success in women's intercollegiate softball. M.S. in Physical Education, 1984, 80 p. (W. E. Langbein)

The purpose of this study was to examine the relationship of cohesiveness to performance success in women's intercollegiate softball. The Ss were the players and coaches of Chicago-Metro Conference during the 1983 intercollegiate softball season. The Sports Cohesiveness Questionnaire was administered at preseason, post season, and post tournament. Teams were grouped according to the % of wins at post season into upper third, middle third, and lower third. Post season performance success resulted in higher levels of post season cohesiveness. In comparisons between successful and unsuccessful teams, all 6 of the cohesion variables tested were sig at the post tournament testing. A gradual increase in the no. of sig cohesiveness variables from pre to post testings supported the influence of a competitive season on a team's level of cohesiveness. Teams with high task motivation had a higher perception of cohesiveness and were more successful. Findings of the present study support those of other researchers that a stronger relationship exists for successful performance resulting in greater team cohesiveness than for cohesiveness resulting in successful performance.

65. HUNTER, J. A. Coronary heart disease risk factors in the "apparently healthy" individual. M.S. in Exercise Physiology, 1983, 61 p. (M. Firlett)

It is known that persons at high risk of cardiovascular disease can be identified through the measurement of various factors such as blood lipids, BP and smoking habits. 35 males and 25 females participated in the Physical Fitness Assessment Workshop at William Rainey Harper College. All Ss were asymptomatic (apparently healthy) individuals. The Ss were divided into 6 groups according to age and sex. Measurements of blood lipids (total cholesterol, triglycerides, and lipoproteins), body composition and resting BP, as well as smoking and aerobic exercise habits were determined. Each S also performed a graded exercise stress test which was analyzed for abnormalities and used to predict max O2 consumption. It was determined that 66% of the males and 64% of the females had 2 or more cardiovascular risk factors. Relationships between VO2 max and the measured risk factors were determined. A direct relationship was observed between VO2 max and activity levels between all age-sex groups except females aged 50-59 yrs. An inverse relationship was observed between VO2 max values and cigarette smoking in all 3 male age groups and in females aged 30-39. An inverse relationship was found between VO2 max and systolic BP in females aged 30-39 and between VO2 max and % body fat in males aged 40-49. No other sig relationships were found between VO2 max and the selected risk factors.

66. JOHNSON, J. S. The effects of "Feelin' Good" Program on cardiovascular fitness. M.S. in Exercise Physiology, 1984, 64 p. (P. Healey)

The purpose of this investigation was to determine effects of the Feelin' Good Program on the cardiovascular fitness of elementary school children. Physical fitness variables measured included steady state HR, cumulative work and HR recovery index. Ss were 150 children in the 2nd, 5th and 7th grades. They were assigned to exp, satellite and control groups on the basis of the school system they attended. All testing was completed within 2 wks immediately preceding and following the training program. A max bicycle ergometer test was utilized to test cardiovascular fitness. With training, sig increases in cumulative work were noted for the 5th and 7th grade children of the exp group and the 2nd grade satellite group. Sig decreases in work capacity were observed in the 5th and 7th grade satellite groups and in all 3 control groups. No change was noted in the 2nd grade exp group. After training no sig changes were observed for either steady state HR or HR recovery index. It was concluded that the Feelin' Good Program can improve physical working capacity but will not change submax HR or HR recovery percentages after a 9 or 13 wk training program.

67. KETT, M. D. Lower leg strength in runners and nonrunners. M.S. in Exercise Physiology, 1983, 43 p. (J. Norris)

Running is believed to strengthen the posterior musculature of the lower extremity. The purpose of this investigation was to determine if running experience and/or wt affects the max torque of the dorsiflexor or plantarflexor muscle groups of the lower leg. Forty-five males, age 18-40, were volunteer Ss. They were grouped according to running experience and wt in a 3 X 3 factorial design. Each S underwent one max strength testing session using a Cybex II dynamometer. Each muscle group was reciprocally tested at 60°, 120° and 180° per sec. An ANOVA was used to detect diff within each test speed. An ANOVAR was used to detect diff between test speeds. No sig diff in plantarflexion torque was found in relation to running experience at any test speed for the interaction of running experience and wt. Wt was a sig factor for dorsiflexion and plantarflexion at 60° per sec and for dorsiflexion at 120° per sec. An approximate ratio of 3.1 was found for torque of plantarflexors to that of dorsiflexors at each test speed, regardless of wt or running experience.

68. LUBBE, M. A. Cardiorespiratory responses of cross country skiing simulated exercise. M.S. in Exercise Physiology, 1984, 43 p. (P. Healey)

The purpose of this study was to compare the cardiorespiratory responses of cross country skiing simulated exercise and treadmill running. This was done by comprising VO2 max values and HR max values attained on the treadmill with those attained on a modified cross country skiing ergometer. The Ss included 14 adult male graduate students with a M age of 24.9 yrs and with no previous cross country skiing ergometry experience. Seven of the Ss were trained and 7 were untrained. Each S underwent a familiarization session, 2 max exercise tests on the cross country skiing ergometer, and 1 max exercise test on the treadmill. Sig higher M HR and M max VO2 (p<.001) were found on the treadmill. The second cross country skiing ergometer test produced greater M max HR and M max VO2 values than did the first cross country skiing ergometer test (p<.001), possibly due to a learning effect.

69. SCHLEGEL, T. R. The training effects of a vigorous aerobic exercise program upon the changes of body composition, neuromuscular endurance, flexibility, and cardiorespiratory capacity of 24 males aged 49 to 69 years as measured annually over three years. M.S. in Physical Fitness Management, 1984, 184 p. (W. Brooks)

It was determined that exercise induced a loss in total body wt, % body fat, and fat wt. Fat free wt stabilized with training. Abdominal neuromuscular endurance increased. Pre-exercise HR stabilized, while max HR decreased and recovery HR decreased. Pre-exercise BP decreased, while max systolic BP increased, max diastolic pressure decreased and recovery BP decreased. Duration of treadmill time increased. Max oxygen consumption increased. The majority of these changes were an indication of physiological improvement. When compared to reported data on similarly aged sedentary males, the majority of performances on measures of physical fitness achieved by the Ss in the present study were superior. This study provided supportive evidence that compliance to a program of exercise may serve as an intervention strategy to impact the decline in human physical abilities associated with the aging process.

70. SCHLUMPF, A. A. Acute cardiovascular responses to the playing of a home video game. M.S. in Exercise Physiology, 1984, 70 p. (P. Healey)

The purpose of this study was to determine the extent to which the home video game may act as a stressor in the manifestation of acute cardiovascular changes. Twenty healthy college aged males played the video game "Pac-Man" for 5 min at each of 3 progressive levels of difficulty. Sig ($p<.001$) increases in HR (21%) and in systolic, diastolic, and M arterial pressures (6 to 8%) were observed during play when compared to resting values. Sig ($p<.001$) but small increases in VO2, V_e, Kcals/min, and METS were also demonstrated. There were no sig diff between levels of play for all variables except HR, where some sig but small increases were observed. Continuous EKG recording showed no changes or abnormalities in conduction or rhythm. The acute cardiovascular responses demonstrated are similar to those produced by small doses of epinephrine. It was concluded that the home video game may act as a stressor of low intensity and is capable of producing moderate but sig increases in HR, arterial pressure, and VO2 among healthy players.

71. SPUSTA, R. W. The responses to inversion on selected cardiorespiratory parameters. M.S. in Exercise Physiology, 1984, 59 p. (M. Liang)

The purpose was to observe cardiorespiratory responses during 10 min of inversion, and to compare the results to those taken in an upright position before and after testing. Ss were 18 college age males with a M age of 24.6 yrs. Ss completed a medical history form before testing. Data were collected during a 5 min resting period, a 10 min inversion period, and a 5 min recovery period. Both resting and recovery data were collected in an upright position.

Changes in HR, BP, respiration rate, EKG tracing and O2 consumption were monitored. Sig changes ($p<.05$) were observed in HR and BP during inversion. O2 consumption altered only during the time the oscillating bed was rotating. Systolic BP rose from a M of 121 mmHg during rest to 142 mmHg during first min of inversion. Diastolic BP rose from a M of 77 mmHg during rest to 96 mmHg during the first min. By the 10th min the M diastolic pressure was 105 mmHg. It was concluded that inversion caused increased pressure to head and eye regions. BP also increased to unusually high levels. It is suggested that persons on medication, including aspirin, or with suspected heart disease should receive physician approval prior to engaging in inversion devices.

72. WHEAT, A. M. Psychological differences in group and individual cardiac exercises. M.S. in Exercise Physiology, 1984, 32 p. (J. Swanson)

Post CABG patients were studied 3 months after surgery to determine if there were any sig psychological diff between patients who participated in an organized group exercise program and patients who participated in a home exercise program. Anxiety, extroversion, self-concept, and independence levels were measured by Cattell's 16 PF on 25 exp and 25 control subjects. There was no sig diff between the group scores for anxiety, extroversion, and self-concept at the .05 level. The exp group was sig higher on the independence scale than the controls.

HOWARD UNIVERSITY (M. L. Leppo)
WASHINGTON, D.C.

73. BROWNLOW, R. The effects of music on heart rate, respiratory frequency, endurance time, and perceived exertion during submaximal treadmill exercise. M.S. in Physical Education, 1984, 182 p. (M. L. Leppo)

This study determined the effects of music on HR, respiratory frequency (RF), endurance time (ET), and perceived exertion (PE) responses on 20 black sedentary college males 19-23 yrs of age during submaximal treadmill exercise. The Ss acted as their own control, and were randomly assigned to 2 treatments with music and without music. All Ss exercised on a treadmill at 0% grade at an intensity of 70% of max HR until volational fatigue. The music used in the experiment was pre-selected by the Ss, and the volume was set according to the Ss preference. HR was recorded through a Fukuda, 3 channel EKG. RF was measured with a chest bellows through a low pressure transducer, and recorded by a physiograph desk model type DMP-4A. PE was determined by using a Borg-20 point graded category scale. ET was obtained via an electric clock. HR, RF, and PE were recorded every 2 min during exercise, and during 10 min of recovery. Analysis of the data revealed Ss listening to music during submaximal treadmill exercise and during the recovery period did not experience a sig increase in HR and ET. The analysis of the data further revealed Ss listening to music during exercise did not report a sig lower PE response. During the recovery period with music, the Ss did report sig lower rate of PE. However, when Ss listened to music during exercise and during the recovery period, a sig increase in RF occurred.

ILLINOIS STATE UNIVERSITY (R. Koehler)
NORMAL, ILLINOIS

74. PEACEMAKER, S. R. B. Status of physical recreation programs in midwest state adult correctional institutions. M.S. in Adapted P.E., 1984, 183 p. (E. C. Imel)

This descriptive study examined the status of physical recreation personnel, facilities, and programs in state adult correctional institutions in 8 midwest states (IL, IN, IA, MI, MN, MO, OH, WI). Physical recreation activities were divided into 2 groups: informal but supervised open recreation sessions, and formal recreation program. A 2 page questionnaire of a check list format was constructed and mailed to 61 institutions in the Spring of 1982. Within 1 mo, a 100% return rate was achieved. Data were reported by individual states and the 8-state midwest region. %s, ranges, Ms, and ratios were utilized in analyzing the data. It was concluded that the quality and extent of the physical recreation programs in midwest state adult correctional institutions is heavily dependent upon the philosophy and resourcefulness of the leisure time personnel and prison administrators at the local and state levels. Most institutions provided diverse recreation facilities and numerous informal, open recreation opportunities which were comparable, and sometimes unique, to those offered in the community.

75. GATES, W. S. Dr. Laura J. Huelster and Physical Education: The administrative years, 1949-1966. M.S. in Physical Education, 1985, 199 p. (R. W. Koehler)

The administrative career of Dr. Laura J. Huelster was investigated to attempt to determine the sig of her impact on the PE profession as well as the program of PE for Women at the University of Illinois, Urbana-Champaign. A variety of primary sources were used to provide information and documentation. Interviews were conducted, and questionnaires were sent to many of Huelster's professional colleagues. Letters, speeches, and papers by Huelster aided the author in understanding Heulster's beliefs and philosophies. Internal and external criticism was applied to all of these materials to determine the relative authenticity of the spoken and written word. A topical and chronological account of Huelster's professional activities during the years 1949-66 provided the historical evidence upon which the conclusions were based. An examination was made of Huelster's administrative techniques, interpersonal skills, decision-making abilities, scholarly research and writing, and leadership qualities. It was concluded that

Laura Huelster brought scholarly, democratic leadership to her position as Head. She was a role model for professionals, had strong philosophic beliefs and a rational mind. Huelster also participated actively and held high offices in regional and national professional organizations. Her influence appears to have been sig.

76. BURTON, D. K. Moving art forms: reinforcing movement concepts using art activities with third grade children. M.S. in Physical Education, 1984, 116 p. (B. Keough)

The purpose of the study was to design a teaching resource guide of four lessons for movement education utilizing art activities to reinforce selected movement concepts with 3rd grade children. 18 children participated in 3 lessons which included 2 parts: (1) a verbal introduction to movement concepts preceding verbal, visual, and tactile participation in an art activity; and (2) participation in a physical movement activity utilizing the concepts. Prior to teaching the 3rd grade class, the lessons were piloted using Illinois State University's Curriculum and Instruction Core I "The Arts" class. This class was made up of elementary education majors. The actual teaching of 2 lessons to children was videotaped and photographed to provide a visual resource for the study. A pre/post test instrument, to discern student's comprehension of concepts before and following participation in the lesson, and an instrument to observe children's response in the videotaped lessons were developed. The Teacher's Resource Guide includes both instruments in addition to 4 written lesson plans arranged in progressive order. The comparative results of the children's comprehension of the concepts included in the pre/post tests along with a summary of 5 professional observation assessments warranted the following conclusions. 1. Learning movement concepts can be enhanced when multiple senses, such as sight, touch, and hearing, are involved in the process. 2. Learning selected movement concepts can be enhanced and reinforced through additional participation in a selected art activity related to those concepts. 3. Using a multiple sensory approach is more interesting, thus motivational, for the participating learner. Based on the success of the lessons, it appears that the Teacher's Resource Guide will offer art activities which can be used as motivational strategies to enhance and reinforce the learning of selected movement concepts.

INDIANA STATE UNIVERSITY
TERRE HAUTE, INDIANA

77. BEEBE, L. J. Evaluation of knee extensor strength after limited range of motion isometric strength training. M.A. in Physical Education, 1985, 75 p. (A. E. Finch)

78. LISSNER, J. M. Comparison of accuracy between two putting techniques. M.A. in Physical Education, 1984, 77 p. (A. E. Finch)

79. MLYNARCZYK, J. Temperature changes during and after ice pack applications. M.A. in Physical Education, 1985, 121 p. (K. L. Knight)

80. POTTS, J. T. Cardiovascular adaptations to different modes of physical training. M.A. in Physical Education, 1984, 86 p. (A. E. Finch)

KANSAS STATE UNIVERSITY (L. Noble)
MANHATTAN, KANSAS

81. HARFORD, R. The effect of caffeine ingestion on fat metabolism during exercise in the fasted and non-fasted states. M.S. in Physical Education, 1984, 41 p. (A. R. Wilcox)

12 recreational runners (6 male, 6 female) exercised in each of 4 conditions: after caffeine ingestion in the fasted state (CM), without caffeine in the fasted state (NCM),

after caffeine ingestion in the non-fasted state (CA), and without caffeine in the non-fasted state (NCA). Exercise consisted of a 30 min run on the treadmill at an intensity of 60% VO2 max. The caffeine dose was 4 mg/kg body wt, dissolved in an artificially-sweetened lemonade drink and consumed 45 min prior to the run. Respiratory exchange ratio (R), caloric cost, and fat utilization were deterined from min-by-min analysis of expired gases. ANOVA was utilized for statistical analysis. Rs were sig increased by caffeine consumption ($p<.01$) and sig depressed by prior fasting ($p<.01$) (CM: .87, CA: .91, NCM: .82, NCA: .87). Total caloric expenditure was not sig altered by any treatment (M=306.2 kcal). The number of calories derived from fat was sig higher in the non-caffeinge and fasted trials ($p<.01$) (CM: 144, CA: 102, NCM: 201, NCA: 147 kcal). There were no interactions between treatment levels. Caffeine ingestion prior to exercise did not enhance fat oxidation. A 12 hr fast prior to exercise increased the contribution of fat to the energy requirements of the run.

82. WEDEL, D. J. The effects of caffeine and fasting on plasma FFA, glycerol, and glucose levels during aerobic exercise. M.S. in Physical Education, 1984, 73 p. (A. R. Wilcox)

Twelve recreational runners (6 male, 6 female) exercised in each of 4 conditions: after caffeine ingestion in the fasted state (CM), without caffeine in the fasted state (NCM), after caffeine ingestion in the non-fasted state (CA), and without caffeine in the non-fasted state (NCA). Exercise consisted of a 30 min run on the treadmill at an intensity of 60% VO2 max. The caffeine dose was 4 mg/kg body wt, dissolved in an artifically-sweetened lemonade drink and consumed 45 min prior to the run. Venous blood was withdrawn prior to consuming caffeine on the caffeine trials and at the start, mid-point, and end of the runs and was analyzed for free fatty acid (FFA), glycerol, and glucose concentrations. The data was analyzed using a repeated measures ANOVA. The exercise caused a sig elevation in FFA and glycerol levels. At the end of the runs glycerol values were sig higher in the fasted trials (NCM: 2.51, CM: 2.76 mg/100ml) ($p<.05$). Caffeine consumption did not affect FFA or glycerol concentrations. Glucose levels were not affected by the exercise nor by the fasting or caffeine treatments. The elevated glycerol levels during the fasted runs indicate greater fat mobilization. There was no evidence for enhanced fat mobilization following caffeine ingestion.

LOUISIANA STATE UNIVERSITY
LOUISIANA

83. GARNER, R. P. The effects of hypoxia and hyperoxia on recovery ventilation following sub-maximal exercise. M.S. in Physical Education, 1984, 56 p. (S. Powers)

8 male Ss performed 3 separate exercise bouts at 80% of their ventilatory threshold. O_2 concentration of the inspired gas was varied in each exp: 55% O_2 / 45% N_2; 14% O_2 / 76% N_2; and 21% O_2 / 79% N_2. The treatments were counterbalanced, using a single blind testing arrangement. VE, HR and gas exchange were measured every 15 sec. for 6 min. of exercise and 12 min. during recovery. No sig ($p>.05$) diffs were found in HR, O_2 uptake, VE or expired volume of CO_2 among treatments during the transition from exercise to rest, suggesting that moderate hypoxia or hyperoxia does not sig alter ventilation or gas exchange during recovery. Further, these results imply that the carotid bodies are not important regulators of ventilation during recovery from exercise.

84. NILES, W. N. Fire fade fire flash — A choreographed study of the relationship between the "hard" and "soft" styles of martial arts. M.S. in dance, 1984, 60 p. (H. L. Norwood)

The dance which was nonliteral in nature, contrasted the physical qualities of the hard and soft styles of the martial arts and compared the use of the circle in each style. These differences and similarities as well as the function of the circle served as the stimuli for selection of the dance movement. The movements, costumes, lighting design and accompaniment were combined to produce an artistically valid choreographic work. The choreography was evaluated by a committee according to established criteria. The dance was presented publicly in the LSU Theatre by 8 members of the LSU Dance Theatre at the annual spring concert.

85. RAMADAN, J. M. *Selected physiological, psychological, and anthropometric characteristics of the Kuwaiti World Cup Soccer team.* Ph.D. in Physical Education, 1984, 126 p. (R. J. Byrd)

VO2 max was determined using a progressive cycle ergometer protocol with data obtained by standard semi-open circuit spirometry. Max anaerobic power (AP max) was calculated by using the highest value of 3 vertical jumps applied to the Lewis formula: (4.9 x wt x D). Body composition (BC) was estimated by skinfolds, and somatotype (ST) was determined by the Heath-Carter method. Translated versions of the Profile of Mood States (POMS) and the State-trait Anxiety test (STAI) were used as data. The Kuwaiti team exhibited moderately high aerobic (51.9 ml/kg/min) and anaerobic (119.6 kg.m/sec) power, both values being sig higher than college norms, but in the mid-ranges for world-class athletes in general. Relative body fatness (8.9%) and a balanced mesomorphic somatotype (2.1-4.5-2.1) were comparable to those of athletes in other high-level team sports. The World Cup soccer players revealed a sig higher value in the anger factor when evaluated by POMS, contrasted to other findings on both elite athletes and college norms. This factor was determined to be normal on follow-up testing 18 mths after the World Cup Games. Finally, they also showed higher state and trait anxiety than the college norms and when compared to other athletes. The structural and functional measures taken for this study appeared to indicate that the Kuwaiti team had appropriate potential for World Cup competition. Excessively high state and trait anxiety, and anger indicated that more psychological preparation was needed.

86. RUSSELL, A. D. An evaluation of the recreational services and opportunities at Fort Polk, Louisiana. M.S. in Recreational Studies, 1984, 114 p. (C. Hill)

The 7 major branches of the REC program at Ft. Polk, LA were evaluated on nationally accepted standards found in the Evaluation and Self-Study of Public Recreation and Park Agencies. For comparison purposes, another Army base, Ft. Hood, TX, was also evaluated. Ss were 15 directors or associate directors from each post who were in charge of the major branches. A questionnaire was administered personally by the researcher to all Ss and the responses evaluated according to each branch's compliance to the 35 standards. Ft. Polk achieved superior compliance in the following areas: philosophy, organizational structure, program content, staff job analysis, personnel practices and supervision. Deficiencies were noted in education for leisure, recruitment, consultants, mobile facilities and general evaluation.

87. SANGUINETTI, C. M. The reliability of levels of expectancy in motor performance of subjects in early childhood, adolescent, and adult groups. M.S. in Physical Education, 1984, 42 p. (A. M. Lee)

Ss were 15 boys and girls from each of 3 age groups: Grades 1 and 2; grades 6 and 7; and adults. Using 3 activities which had been sex-typed in a previous study, Ss were asked to indicate how they would expect to perform in each task (provided they had some skill instructions). Each S was tested 3 times over a 2-wk period. Intraclass R was used to determine reliability for each age group on each task. A sex X age X task X trial ANOVA with repeated measures on the last two factors was used to ascertain any diff in expectancy estimations. The estimations of success for all 3 age groups were reliable (R = .85) for all 3 tasks. Younger children estimated higher success on masculine tasks, and females were higher on feminine tasks. No sex differences were found for the neutral task. It was concluded that young children can provide reliable expectations for success in motor skill performances, and sex-typing of activities sig affects performance estimations at all ages.

MIAMI UNIVERSITY (H. Lawson)
OXFORD, OHIO

88. HART, L. S. Effects of 60% maximal one hour bicycle and treadmill exercise on Beta-endorphin levels in adult males. M.A. in Health, Physical Education, and Recreation, 1984, 49 p. (M. E. Langenfeld)

10 men (19-27 yr) volunteered for this study to examine the effect on plasma Beta-endorphin (B-ED) of running and bicycling for 1 hr; and to compare B-ED levels after running to B-ED levels after bicycling. All Ss were physically active and accustomed to both exercise modes. Following preliminary aerobic capacity testing, Ss were randomly assigned to exp sessions of bicycling or running at loads requiring 60% of the mode-specific VO2 max. 5 Ss also participated in control sessions. Blood samples were collected pre- and post-exercise. Blood was centrifuged, separated, and stored frozen until analysis. Analysis of plasma involved separation of B-ED from Beta-lipotropin by short column chromatography followed by radioimmunoassay. There were no sig pre-to-post exercise diffs (p>.05) in mean B-ED levels in any of the 3 sessions. Expressed as % change in B-ED from pre- to post-exercise, there was no sig diff

between running, bicycling, or control sessions. Results indicate that 1 hr of bicycling or running exercise at 60% VO2 max does not consistently increase B-ED. Responses are highly variable between individuals.

MIDDLE TENNESSEE STATE UNIVERSITY (G. Penny)
MURFREESBORO, TENNESSEE

89. BRATCHER, J. D. Teaching and coaching soccer. D.A. in Physical Education, 1984, 198 p. (G. D. Penny)

90. BRIGGS, E. C. The status of physical education programs in the community colleges and junior colleges in Tennessee. D.A. in Physical Education, 1984, 113 p. (G. P. Reeder)

91. GRAENING, J. C. Profiles of high school principals and superintendents, their selected attitudes toward physical education and athletics, and the current status of physical education and athletics in Arkansas high schools. D.A. in Physical Education, 1983, 135 p. (A. H. Solomon)

92. GREEN, P. L. The administrative status of selected women physical educators in thirteen southern states. D.A. in Physical Education, 1984, 136 p. (J. L. MacBeth)

93. GROOMS, R. A. A competency-based in-service training program model for implementing public law 94-142 in physical education. D.A. in Physical Education, 1984, 256 p. (P. D. McClellan)

94. KEY, J. B. Development of a computer managed instruction companion to the health-related physical fitness test. D.A. in Physical Education, 1984, 57 p. (M. H. Whaley)

95. MADREY, W. The status of physical education programs at selected historically black private colleges and universities in North Carolina, South Carolina, and Virginia. D.A. in Physical Education, 1984, 120 p. (A. H. Solomon)

96. PRUITT, M. R. Effects of selected colors on reaction time and racquetball wall volley performance. D.A. in Physical Education, 1984, 121 p. (E. R. Mendell)

97. PONDER, F. D. A comparison of selected public and private physical education teacher preparation programs in North Carolina. D.A. in Physical Education, 1983, 198 p. (P. D. McClellan)

98. WEAVER, D. C. A study to determine the effect of exercise on depression in middle-aged women. D.A. in Physical Education, 1984, 169 p. (R. B. Ballou)

99. WRIGHT, K. E. An evaluation of the professional preparation of high school athletic trainers in the state of North Carolina. D.A. in Physical Education, 1984, 82 p. (G. D. Penny)

NORTH CAROLINA CENTRAL UNIVERSITY (C. Hughley)
DURHAM, NORTH CAROLINA

100. BAKER, M. Physiological effects of exercise upon females age 55 and over. M.S. in Physical Education, 1984, 44 p. (C. Hughley)

Pre and Post training assessments of BP, resting HR, % body fat, endurance, strength, and flexibility were made to determine the effect of a 10 wk training program on 11 females age 61-76. Methods of assessment were auscultatory BP, brachial palpation, skinfold measurement, Cooper 12-min run/walk, Modified Kraus-Weber and Modified Sit and Reach, respectively. The twice weekly training program consisted of 10 min of flexibility and strength exercises, walking 20 to 30 min at or above intensity threshold and 10 min of cooldown where the Ss walked slowly. A third training period was encouraged. The "t" test for correlated groups was used to analyze the data. Results showed a sig improvement in muscular strength, % body fat, endurance, and flexibility. There was no sig improvement in BP and resting HR. Results demonstrated the benefits to be derived from a training program and illustrated the difficulty in sig modifying BP through exercise.

NORTHEASTERN UNIVERSITY (C. S. Christensen)
BOSTON, MASSACHUSETTS

101. BENERAKIS, J. H. The training effect of an upper body circuit weight training program on heart rate and oxygen uptake. M.S. in Physical Education, 1983, 34 p. (C. Christensen)

An 8 wk upper body circuit weight training program was studied in order to elicit specific alterations in parameters of resting HR and max VO2. Ss included 8 college students (5 men and 3 women) with a control group of 4 men and 4 women. Training consisted of 8 exercises performed with free weights, 1 circuit a day. Ss exercised at a % of their body wt for a specific no. of repetitions as developed by Vitace (1973). Rest intervals were decreased throughout the 10 wk period. Control and exp groups were pre- and post-tested using Physical Work Capacity Test on Monark bicycle ergometers. Results showed that following the training period, the exp group showed no sig decrease in resting HR. But a sig increase was seen in max VO2 of the group (sig level 0.05).

102. BUTCH, C. A. The incidence of injuries in intercollegiate tennis players. M.S. in Physical Education, 1983, 47 p. (J. A. Clayton)

The incidence of injuries sustained by men and women tennis players in the Northeastern U.S. during 2 yrs was studied. The incidence of injury at the intercollegiate level, the types of injuries, and the classification of information according to body parts was investigated. The source used to collect data included a Tennis Injury Report Form for every injury relating to tennis. These forms were filled out by intercollegiate coaches or trainers. Each coach or trainer was asked to include injuries occurring in the regular season (practice and game) and to distinguish whether competition was involved. Results showed that the most common injuries were sprains and strains which occurred in the ankle, shoulder, and knee joints. Data also provided information on the high reoccurence rate of ankle, shoulder, and knee injuries, which suggested that treatment and rehabilitation of injuries may not have been fully completed before the players resumed practice or a match. It is hoped that this information will aid coaches and trainers in recognizing mechanisms which will cause tennis injuries.

103. EFFREN, E. J. The role and function of a therapeutic recreator on a geriatric consult team in an acute care setting. M.S. in Recreation Education, 1983, 68 p. (E. G. Eliopoulos)

A study to illustrate the role and function of the Therapeutic Recreation Specialist on a Geriatric Consult Team in an acute care setting was undertaken. The Geriatric Team Consult Assessment Form, which was devised by Mass. General Hospital, was used. Ss included 18 elderly patients who were consulted to the team during a 3-month span. 7 figures were compiled to illustrate a composite of the patients consulted to the team, while a case study approach was used for those individuals consulted to the Therapeutic Recreation Specialist. Results showed that the therapeutic recreator was consulted for the following reasons: (1) increase motivation and productivity, (2) increase sensory stimulation, (3) decrease fear and anxiety precipitated by hospitalization, (4) increase self-concept, (5) guide towards an independent leisure lifestyle, (6) offer a sense of control, (7) increase reality orientation, and/or (8) promote supervised activity and offer structure. Analysis of patients consulted to the Therapeutic Recreation Specialist showed the majority of patients received a benefit and grew in one or more of the aforementioned areas.

104. FLANIGAN, J. E. Indices of lack of motor confidence of young children during dynamic balance tasks. M.S. in Physical Education, 1984, 54 p. (H. McCracken)

105. GUNN, P. P. P. An assessment of recreation program development in level III nursing homes. M.S. in Recreation and Leisure Studies, 1983, 37 p. (E. Eliopoulos)

The purpose of this study was to examine how much certain factors influence development in recreation programs at Level III nursing homes. The factors which were considered included budget, facilities and equipment available for use by the recreation department, objectives of the program, religious affiliation, diets and sex of residents, ethnicity, mental and physical function of residents, and perceived cooperation from the administrator and other departments. Survey data were collected from a non-probability sample of Level III nursing home Activities Directors. The 146 nursing homes surveyed included all Level III nursing homes in Boston and 25 surrounding towns. A questionnaire which assessed how much each selected factor influenced program development on a 5 point Likert type scale was used. M scores determine how much influence each factor played in development of recreation programs. Results showed that the greatest influence on development of recreation programs was facilities and space available for use by the recreation department. Moderate influences included available equipment, resident functioning, perceived cooperation from administration, budget, transportation resources, and no. of recreation personnel.

The least effected influences included entertainment resources, sex of residents, monetary sources outside the budget, educational background of personnel, ethnicity, and dietary requirements.

106. HARMAN, S. T. A cardiovascular exercise and education program for elementary school children. M.S. in Physical Education, 1984, 109 p. (W. J. Gillespie)

107. HOLT, S. B. Physical working capacity response to temperature variation. M.S. in Exercise Science, 1984, 89 p. (C. S. Christensen)

16 apparently healthy male volunteers (30-60 yrs) were randomly divided into 4 equal groups. During each of 4 consecutive weekly sessions each group completed the YMCA Physical Working Capacity Test in temperature conditions of either 68, 78, 88, or 98° F with relative humidity maintained at 60%. The Ss cycled on a bicycle ergometer at 3 progressive workloads for 3 min starting at 300 KPM/min according to the YMCA PWC protocol. An ANOVA determined no sig diff ($p<.05$) among the 4 ambient temperature conditions using HR as the dependent variable.

108. KNAPPE, J. A. The effect of color on hand grip performance. M.S. in Physical Education, 1983, 65 p. (H. McCraken)

64 Ss were assigned to 1 of 2 orders of testing the effects on hand grip strength production of visual exposure to color. 9 grip strength performances were carried out following exposure to a prearranged order of color settings. The 3 colors used were white, red, and pink. Trials 1, 3, 5, 7, and 9 consisted of scores obtained during the white setting. Trials 2, 4, 6, and 8 consisted of scores obtained during the pink and red color settings. A repeated ANOVA of order, sex, and color was computed in a 2(order) x 2(sex) x 3(color) design with color as the repeated measures factor.

Results found sig effects for order, sex, and the order by sex interaction. Males proved stronger than females. Overall results showed no effect of color exposure on strength production.

109. MITCHELL, M. W. *The influence of an aerobic fitness program on self-concept related frustration in corporate employees.* M.S. in Physical Education, 1984, 104 p. (W. J. Gillespie)

110. ROTHSTEIN, A. R. *The effects of aquatic activities on self-stimulatory behaviors and attention to task in autistic adults.* M.S. in Recreation and Leisure Studies, 1985, 77 p. (F. Robinson)

111. SPYROPOULOS, P. *Gait components of adult obese males.* M.S. in Physical Education, 1984, 74 p. (M. Cairns)

NORTHEAST MISSOURI STATE UNIVERSITY (L. Boleach)
KIRKSVILLE, MISSOURI

112. ARABAS, C. *The relationship of heart rate relative to performance as a criterion measure of lactic acid and the anaerobic threshold in college female swimmers.* M.A. in Physical Education, 1984, 55 p. (J. Mayhew)

11 female swimmers were measured for HR and lactate after each of 4 sets of 4 100-yard freestyles. Sets were swam at 73, 78, 85, and 93% of best 100-yard freestyle time. HR was measured from EKG recorded immediately after each set. Blood samples were taken from the anticubital space 3 mins after each set and analyzed for lactate. Onset of blood lactic acid (OBLA) occurred at 87% ± 2.6% of best time. Multiple regression produced accurate (R = .86-.91) estimations of % best time or blood lactate levels. Using

multivariate techniques, training stress levels can be assessed for lactate production.

113. BROWN, M. E. The effect of plyometric training on the vertical jump of high school boys' basketball players. M.A. in Physical Education, 1984, 47 p. (J. Mayhew)

13 freshmen and sophomore, HS male basketball players were tested for vertical jump performance (VJ) before and after 12 wks of plyometric training. 13 other players engaged in basketball training only and served as controls. Depth jumps were performed from a 40-cm bench in 3 sets of 10 reps 3 times/wk. Depth jumping produced sig greater gains in VJ with arm assistance than did basketball training. Arm assistance contributed sig to VJ performance. Plyometric training coordinated arm movement with leg drive to enhance VJ during the basketball season.

114. MIKEL, R. A. The relationship of specific variables to successful baseball batting in selected varsity college baseball players. M.A. in Physical Education, 1984, 60 p. (L. Boleach)

The purpose of this study was to identify the relationship of selected variables to successful baseball batting. The independent variables under investigation were attentional style, coincidence-anticipation, knowledge, and MT. Hitting performance was determined by a hitting productivity system and from batting averages taken from the 1983-84 baseball season. 20 volunteer varsity baseball players from Northeast Missouri State University served as Ss. Pearson product-moment r's were computed using all variables. It was determined that coincidence-anticipation demonstrated the highest r (-.75) and was sig related ($p<.001$) to the hitting rating criteria. Knowledge and the TAIS subscales BET and RED were also found to be sig related ($p<.05$) to the rating results. Multiple regression analysis determined that a test battery consisting of coincidence-anticipation, the BET and BIT attentional style subscales, and knowledge could accurately predict batting ability in college baseball players. The multiple R for these 4 variables was .92 accounting for 84.6% of the common variance. The SEE was 14.3.

115. HEGARTY, P. A. Effect of biofeedback training upon functional ankle movement in a prone flutter kick. M.A. in Physical Education, 1984, 42 p. (L. Boleach)

The purpose of this study was to determine the effects of EMG biofeedback upon functional ankle movement in the prone flutter kick. There were 24 Ss (13 F, 11 M) ages 18 to 26 years, who were enrolled in a beginner swimming class during the spring semester 1984, at Northeast Missouri State University. The exp group (EMG biofeedback, N=12) was given 10 sessions of biofeedback training for a period of 5 wks. They also participated in swimming classes which met twice weekly for 15 sessions. The control group (N=12) participated in the same 15 sessions of class but received no biofeedback training. The group performances were analyzed utilizing independent t-tests. Pre-test and post-test comparisons were determined by dependent t-tests. The study found a sig increase in ankle flexibility for both the exp and control groups. No sig improvements (p>.05) were found between the 2 groups' times in the prone glide with flutter kick.

116. COX, M. A. The effect of different types of music on physical performance. M.A. in Physical Education, 1984, 34 p. (L. Boleach)

The purpose of this study was to determine the effects of different types of music on physical performance. Two types of music were present during testing: stimulative and sedative. The observations included: 1) vertical jump; 2) hand grip strength; 3) performance on a pursuit rotor device; 4) RT; 5) MT; 6) arm and shoulder strength as measured by a bench press; and 7) performance on a mirror tracing device. 17 undergraduate students at Northeast MI State University enrolled in introductory PE class during the spring semester 1984 served as Ss. A dependent t-test was used to determine if sig differences existed between stimuli. RT scores were sig ($p<.05$) faster for the rock music group than for the classical music group. The scores for MT, vertical jump, hand grip strength, pursuit rotor performance, mirror tracing errors, mirror tracing time, and bench press strength were not sig ($p>.05$) different across music types.

117. POWELL, P. A. Relationship of anthropometric dimensions of the leg and muscular strength at the knee. M.A. in Physical Education, 1984, 62 p. (J. Mayhew)

71 male athletes were measured for flexion and extension strengths at the knee on a Cybex II dynamometer at 3 velocities (60, 180, 300 °/sec). Bilateral thigh circumferences at 3 sites, skinfold measurements at the anterior thigh and medial calf sites, and upper and lower leg lengths were measured. Thigh volumes were calculated from length and circumference measurements. Multiple regression analysis selected ht, wt, and one thigh measurement to estimate each torque with R=.69-.80. Ht and wt are major factors in torque generation about the knee and may be used to establish minimum standards in male athletes.

118. WHITMORE, L. G. A comparison of the effectiveness of two teaching methods for tumbling skill acquisition and attitude change at the elementary school age. M.A. in Physical Education, 1984, 57 p. (M. Cogan)

This study compared the effectiveness of the Guided Discovery Method and the Teacher-Directed Method for Tumbling skill acquisition and attitude change. The Ss (N=223) were first through fifth grade students at Castle

Hill Elementary, Waterloo, IA, during the 1983-1984 school year. Each grade level had 1 class using each teaching method with the exception of the fourth and fifth grades. A combination fourth-fifth grade used 1 method and an individual fourth and an individual fifth grade used the other method. Data were collected immediately before and after a 4 wk instructional unit. ANCOVA was used to assess the effect of sex, grade, and teaching method on post-treatment skill and attitude scores using pretreatment skill and attitude scores as the covariate. The level of sig was .10. Analysis revealed sig gains for both teaching methods in skill and attitude, but no sig diff between teaching method, sex, or grade.

NORTHWESTERN STATE UNIVERSITY (A. R. Bonnette)
NATCHITOCHES, LOUISIANA

119. BALDWIN, T. W. A comparison of female students enrolled in a statewide residential high school for the gifted and talented and a public high school on selected motor fitness and perceptual motor performance variables. Ed.D. in Health and Physical Education, 1985, 216 p. (A. R. Bonnette)

120. SILVESTRI, L. The effects of aerobic dance and progressive relaxation on reducing anxiety and improving physical fitness in high school girls. Ed.D. in Health and Physical Education, 1985. (S. Molstad)

OHIO STATE UNIVERSITY
COLUMBUS, OHIO

121. AXTELL, R. S. The effect of warm-up on isokinetic muscle testing. Ph.D. in Physical Education, 68 p. (R. Bartels)

122. BROOKS, W. B. Effect of treadmill running exercise

at 25% and 75% of maximal oxygen consumption on post-exercise resting metabolic rate. Ph.D. in Physical Education, 1984, 128 p. (R. Bartels)

123. BROWN, C. L. Attitudes towards fair play in women's lacrosse. Ph.D. in Physical Education, 1983, 199 p. (B. Nelson)

124. BUTTERFIELD, S. A. A comparison of the fundamental motor and balance skills of deaf and hard of hearing children ages 3 thru 14. Ph.D. in Physical Education, 1984, 183 p. (W. Ersing)

125. CASEY, J. The effects of coaction on the skill development levels of low skilled and highly skilled gymnastic students. Ph.D. in Physical Education, 1984, 154 p. (C. Mand)

126. CLEARY, P. A. The effect of propranolol on the training response to endurance exercise in normal human adults. Ph.D. in Physical Education, 1984. (R. Bartels)

127. DAVIS, H. W. Studies on eicosanoid metabolism: Responses of the cardiovascular system to aerobic training and ischemia. Ph.D. in Physical Education, 1984, 128 p. (R. Bartels)

128. DOUGE, B. The effect of a cooperating teacher's modeling of specific teaching behaviors on the teaching behavior of a physical education intern. Ph.D. in Physical Education, 1984, 231 p. (D. Siedentop)

129. DUGAS, D. M. Relationships among process and product variables in an experimental teaching unit. Ph.D. in Physical Education, 1983, 170 p. (D. Siedentop)

130. GIBBS, M. J. The development of an instrument package to survey perceptions of faculty members regarding specific areas of the athletic program at their institutions. Ph.D. in Physical Education, 1983, 217 p. (B. Nelson)

131. HARRALL, J.-A. The use of physical fitness and a relaxation curriculum in a residential treatment center to reduce inappropriate behaviors of emotionally disturbed children. Ph.D. in Physical Education, 1984, 66 p. (C. Mand)

132. HART, C. L. The modification of teacher behavior on the academic learning time of selected students in physical education. Ph.D. in Physical Education, 1983, 202 p. (D. Siedentop)

133. HESTER, D. J. The effects of play environment complexity on the motor and social activity of developmentally delayed preschool children. Ph.D. in Physical Education, 1983, 164 p. (J. Herkowitz)

134. INOUE, S. A phenomenological approach to the sport experience. Ph.D. in Physical Education, 1984, 108 p. (S. Kleinman)

135. JOSEPH, D. P. The effects of augmented verbal information feedback in the motor skill learning of totally blind subjects even to twenty-one years of age. Ph.D. in Physical Education, 1984, 159 p. (W. Ersing)

136. KANTER, M. M. The effects of chronic aerobic exercise training on hydroperoxide enzyme levels and cardiotozic effect of adriamycin administration in mice. Ph.D. in Physical Education, 1984. 117 p. (R. Bartels)

137. KEAR, K. T. Cardiac swimming and a traditional rehabilitation program of bike-walk-jog; a comparison of maximal oxygen consumption and strength. Ph.D. in Physical Education, 1983, 121 p. (R. Bartels)

138. KERN, R. W. A comparitive study of ten selected athletic fund raising programs from institutions of higher education west of the Mississippi River. Ph.D. in Physical Education, 1983, 223 p. (B. Nelson)

139. LAWLESS, S. J. The effects of volleyball game modifications on children's opportunity to respond and academic learning time. Ph.D. in Physical Education, 1984, 323 p. (D. Siedentop)

140. LENHARD, R. A. Calcium antagonists: effect on skeletal muscle function and working capacity on normal males. Ph.D. in Physical Education, 1984, 63 p. (R. Bartels)

141. LINDSAY, G. B. The relationship and predictive ability of self-efficacy and locus of control among females in a weight loss health education intervention. Ph.D. in Health Education, 1984, 111 p. (R. Kaplan)

142. LIPNICKEY, S. C. A comparison of the general well-being, specifically the health behaviors, of participants and non-participants in a university level personal health course. Ph.D. in Health Education, 1983. 142 p. (M. K. Beyrer)

143. MCBRIDE, D. L. The behaviors of adolescent boys in a residential treatment center during high ropes course experiences. Ph.D. in Physical Education, 1984, 209 p. (C. Mand)

144. OGANOWSKI, J. L. The relationship between burnout, somatic complaints and illnesses and levels of self-actualization of registered nurses in Columbus, Ohio. Ph.D. in Health Education, 1984, 117 p. (P. Heit)

145. OLSON, K. An isotonic universal gym weight training program for dancers to increase strength, dispel myths and increase subjective and objective dance techniques. Ph.D. in Physical Education, 1984, 72 p. (R. Bartels)

146. REEKIE, S. H. A history of sport and recreation for women in Great Britain. Ph.D. in Physical Education, 1982, 196 p. (B. Bennett)

147. REESE, R. D. The effects of joint supervision on the teaching effectiveness of elementary physical education student teachers. Ph.D. in Physical Education, 1983, 236 p. (D. Siedentop)

148. RICHARDSON-LENHARD, H. The effects of training on selected steroid hormones: Response to exercise in postmenopausal women. Ph.D. in Physical Education, 1984, 74 p. (R. Bartels)

149. SERVEDIO, F. J. The effects of weight training, using olympic style lifts, on various physiological parameters in pre-pubescent boys. Ph.D. in Physical Education, 1984, 80 p. (R. Bartels)

150. TINNING, R. I. A task theory of student teaching: development and provisional testing. Ph.D. in Physical Education, 1983, 339 p. (D. Siedentop)

151. VANDERMARS, H. The effects of periodic prompting on selected teaching behaviors of physical education student teachers. Ph.D. in Physical

Education, 1984, 207 p. (D. Siedentop)

152. WHEELER, M. F. Surface to essence: appropriation of the Orient by modern dance. Ph.D. in Physical Education, 1984, 307 p. (S. Kleinman)

153. WINNINGHAM, M. L. Effects of a bicycle ergometry program on functional capacity and feeling of control in women with breast cancer. Ph.D. in Physical Education, 1983, 146 p. (R. Bartels)

154. WORTHY, P. D. An analysis of fundamental motor skills of urban black and urban white children of middle childhood age. Ph.D. in Physical Education, 1984, 375 p. (W. Ersing)

OREGON STATE UNIVERSITY (M. G. Maksud)
CORVALLIS, OREGON

155. ATKINS, V. F. A comparison of the effect of experimenter and microcomputer delivered knowledge of results on the response speed of nonretarded and mentally retarded students. Ph.D. in Education, 1984, 157 p. (C. L. Lambert)

156. BOONCHAI, W. Changes in strength, anthropometric measurements and cardiovascular function as a consequence of participation in a coed weight training course. D.Ed. in Education, 1985, 157 p. (C. L. Lambert)

157. DEANGELIS, L. A. An investigation of views of selected physicians regarding the importance of corporate executive fitness programs. M.A.I.S. in Physical Education, Journalism, and Physical Education, 1984, 77 p. (C. L. Lambert)

158. EL BADEN, B. M. The effect of peer presence upon health-related physical fitness test scores of

college students. Ph.D. in Education, 1984, 98 p. (J. M. Dunn)

159. JUN, T. W. The relationship between biorhythms and injuries to college football participants. M.S. in Education, 1984, 81 p. (R. F. Irvin)

160. KING, C. M. Classroom teachers' accuracy in observing students' motor performance. M.S. in Education, 1985, 62 p. (J. M. Dunn)

161. LAI, S. M. A comparison of body composition, body catexis, and attitude toward obesity in women with different levels of physical activity. Ph.D. in Education, 1984, 130 p. (A. W. Flath)

162. MCINTOSH, M. A. The attitudes of Oregon State Penitentiary minority inmates toward activity programs as a rehabilitative tool. Ph.D. in Education, 1984, 176 p. (A. W. Flath)

163. NAUMAN, H. E. A comparison of the prevalence of infectious gastrointestinal disease and the quality of individual, surface source water systems in Lincoln County, Oregon. M.S. in Education, 1984, 84 p. (W. H. Anderman)

164. STIDWILL, H. F. Motives toward track and field competition of foreign and domestic grant-in-aid student-athletes in NCAA Division I colleges and universities. Ph.D. in Education, 1985, 81 p. (A. W. Flath)

165. TAPSUWAN, S. The role and function of physical education and sport in the Nation Building of Thailand. Ph.D. in Education, 1984, 297 p. (C. L. Lambert)

PENNSYLVANIA STATE UNIVERSITY (H. M. Lundegren)
UNIVERSITY PARK, PENNSYLVANIA

166. BALKE, P.-O. Ventilatory responses in women at 362m and 2300m before and after glycogen depletion. M.S. in Physical Education, 1984, 124 p. (E. R. Buskirk)

The effects of acute moderate hypobaric hypoxia, glycogen-depleting endurance exercise, and a combination of these factors on the ventilation threshold (T_{Vent}), the hyperventilation threshold (T_{hyperV}) and max O2 consumption (VO2 max) were examined. 12 well-conditioned women runners, all low-altitude natives, volunteered as Ss. Each S performed walk-run progressive exercise tests to max exercise capacity at 362 m (720 mmHg) and at 2300m (568 mmHg). Initial exercise intensity was 3.5 mph, 0% grade for 3 mins, thereafter increasing intensity every min; first by 2.5% grade increments to 10%, then returning grade to 0% and increasing speeds to 5.6, 6.4, 7.2 and finally 8.0 mph. Grade was then elevated 2% per min until termination. Measurements made every 30 secs included VO2, carbon dioxide production (VCO2), minute ventilation (V_E), and ventilatory exchange ratios for O2 and CO2 (V_E / VO2 and V_E / VCO2). Determination of basal metabolic rate (BMR) was made before and after an exhaustive glycogen-depleting endurance run at 65 to 81% VO2 max. Ss were then randomly divided into 2 groups for a final graded exercise test at either 362m or 2300m. T_{Vent}, T_{hyperV}, and VO2 max at 362m occurred at 25.4, 49.0 and 58.8 ml/kg/min, respectively. At 2300m, absolute VO2 decreased 9.1, 12.1, and 13.1% at the respective thresholds for VO2max. When expressed as % VO2 max, the altitude effect was eliminated with T_{Vent} at 44% and T_{hyperV} at 83%. VCO2, V_E and V_E / VCO2 were all higher for a given VO2 at 2300m. When expressed as a % VO2 max, the diff in V_E / VCO2 became progressively larger as exercise intensity increased. Exhaustive glycogen-depleting exercise had no sig effect on T_{Vent}, T_{hyperV} or VO2 max when expressed in terms of absolute VO2 or % VO2 max; however, exercise time was decreased. A decreased VCO2 coupled with an unchanged V_E for a given exercise intensity resulted in sig higher V_E / VCO2 ratios after glycogen depletion. Under conditions of hypobaric hypoxia or glycogen depletion, similar progressively greater increases in V_E occurred as VCO2 increased. It is concluded that exposure to acute hypobaric hypoxia produces the same % decrease in T_{Vent} and T_{hyperV} as in VO2 max while glycogen-depleting endurance exercise has no effect on T_{Vent}, T_{hyperV} or VO2 max. The disproportionate increase in VCO2 is not adequately explained by a simple CO2 flux theory for control of exercise ventilation.

167. BIBEAU, D. The effects of a death education experience on the relationship of knowledge to attitude, anxiety, and fear concerning dying and death. Ph.D. in Health Education, 1984, 106 p. (R. W. St. Pierre)

This study investigated the relationships between a change in death and dying knowledge and changes in death and dying attitude, anxiety, and fear for a group of students enrolled in a death education course as compared to a control group. A second purpose was to assess the impact of this death education experience on death and dying knowledge, attitude, anxiety, and fear. Ss were 182 undergraduate students at The PA State University. The exp treatment consisted of a 10-wk cognitive-oriented death education course which met once per wk. The control group consisted of 97 students enrolled in other courses which met for the same time periods. ANCOVA was used to determine the impact of the death education course. Sig diffs ($p<.05$) were ofund between the groups on the post-test measures of death and dying knowledge and fear of dying of others. T-tests for the diff between 2 r's showed no sig diffs between groups in the relationships of knowledge changes to changes in the attitudinal variables. It was concluded that the death education experience was effective in increasing knowledge, but that the increase was not sig related to changes in attitude, anxiety, or fear.

168. BILYK, M. J. Effect of depth jumping on leg strength and jumping performance. M.S. in Physical Education, 1984, 54 p. (C. A. Morehouse)

The purpose of this study was to determine the effects of plyometric training on strength and jumping ability when utilized in conjunction with a progressive wt training program. The study employed a force platform to measure flight time and jumping performance and leg dynamometer to measure leg strength. 16 members of The PA State Men's Volleyball Team served as Ss and were divided into 2 groups. The control group trained only with wts while the exp group trained with wts ad depth jumping. The drop jump training consisted of performing 3 sets of 10 jumps, 3 times per wk, over an 8-wk period. The results showed that both groups improved sig in leg strength. Neither group, however, improved sig in jumping performance. As the amounts of countermovement in the 4 standing jump test increased, the mean jump ht of the group also increased sig. Finally, the drop ht jumps preceded by drops from 40 and 60 cm hts resulted in higher jumps than jumps following other drop hts ranging from 20 to 100 cm. It was concluded that strength could be increased with either training method. It was also concluded that depth jumping did no sig increase a person's jumping performance when used in conjunction with progressive wt training.

169. BLACKBURN, G. G. Cardiorespiratory responses to six-week limb-specific exercise conditioning programs. Ph.D. in Physical Education, 1984, 261 p. (E. Kamon)

To investigate the cross-training effects on cardiorespiratory measures and the ventilatory determined 'Anaerobic Thresholds' (Ventilatory Threshold (VT) and Respiratory Compensation Threshold (RCT)), 22 untrained college-aged men volunteered to participate in either a 6-wk arm-crank(AT) (n=11) or leg-cycle (LT) (n=11) conditioning program. Ss trained 5 times a wk at approximately 70% of their ergometer-specific peak intensity. Exercise sessions lasted 30 mins for LT Ss and 40 mins for AT Ss. Results were analyzed using a mixed-design 3-factor ANOVA. Conditioning sig ($p<.05$) increased peak VO2 for exercise with trained as well as untrained limbs. It was concluded that peripheral adaptations were responsible for the increases in peak VO2. The RCT was greater for leg cycling than arm cranking when expressed either as an absolute or a relative measure. Only the absolute measure of VT was greater for cycling than cranking. After conditioning, only the absolute measures of VT and RCT increased for exercise with trained or untrained limbs. It was concluded that the training stimulus was inadequate to alter the relative measures of VT or RCT.

170. BLAKE, P. D. The effect of contextual interference on retention in educable mentally retarded adolescent males, through the use of a blocked and random learning paradigm. M.S. in Physical Education, 1984, 74 p. (H. M. Lundegren)

48 adolescent males ages 15-19 yrs participated in an exp to study learning and memory. 24 Ss were classified as 'normal' intelligence and 24 were EMRs. The exp consisted of 5 parts: acquisition, retention, recall, recognition, and performance. During acquisition the S learned 3 similar tasks which involved knocking down 3 of 6 barriers in a prescribed sequence. Each task was paired with a colored light and a color-coded diagram. The S continued learning until he met the base-line criterion. Retention was similar to the acquisition exp. The S was not shown the diagrams of the tasks but responded to the color-coded light. The total no. of correct trials was lower than for acquisition. Recall and recognition were assess by paper-and-pencil tests. With the exception of the diagrams present, the procedures for performance were identical to retention. The

Ss were divided into 2 acquisition groups--blocked and random. The Ss in the blocked group recevied all 15 acquisition trials for 1 task before moving on to the next. The Ss in the random group received the tasks in a varied order. The dependent variables used to assess memory were MT, RT, and errors. The duration of the entire study was approximately 55 min per S. The data were analyzed using MANOVA, ANOVA, one-way ANOVE, Games' Robust Variance Analysis, Tukey's Honestly Significant Difference test, and the Least Significant Difference test. Though most of the results were not sig, the data generally fell in the expected directions. In conjunction with other research findings, this suggests that the retention of motor skills in the EMR could be positively affected when the learning occurs with contextual interference and rehearsal aids.

171. BLAZEY, M. A. Theme park use by older persons: An exploratory investigation. Ph.D. in Recreation and Parks, 1984, 202 p. (G. C. Godbey)

This investigation examined selected aspects of theme park visitation by 220 persons over the age of 55 visiting Hersheypark in Hershey, PA between June 15 and July 20, 1983. A 93-item interview schedule addressed exploratory research questions regarding assessment of the park environment; logistics of visitation; motivations, meanings and satisfactions; and on-site behavior. Results were reported using descriptive statistics. X^2 and diff in Ms tests were performed on selected variables. Sig variation by sex was found in desired companion, relationship of accompaniment, and purchases from concession stands. Sig variation by age group, young-old versus old-old, was found in M age of desired companion, age of companions, in the no. of rides ridden and zoo visitation. It was concluded that the predictability of the theme park experience, the regional nature of the park, and a wide variety of activities led to high levels of satisfaction. Respondents were not found to visit in guardian roles.

172. BOLDIN, E. M. A comparison of two training modalities for cardiorespiratory fitness: Arm ergometry vs. wheelchair ergometry. M.S. in Recreation and Parks, 1984, 101 p. (H. M. Lundegren)

15 healthy college students (10 male, 5 female) participated in the study. 12 Ss were randomly assigned to either wheelchair ergometry (WE=6) or arm ergometry (AE=6) groups. 3 female volunteers served as the control group. As Ss performed pre-and post-training peak VO2 tests on both the wheelchair and arm ergometers. The exp groups trained 3 days per wk for 5-1/2 wks. Training sessions were 20 mins in duration, and Ss trained at an intensity of about 80% of peak heart rate. Results of the study showed that both the WE and AE groups sig increased ($p < 0.05$) peak VO2 and peak PWC. ANCOVA showed insig diffs in training effects. Paired t-tests revealed that the AE group sig improved peak VO2 and peak PWC on both ergometers.

173. BORTNER, J. E. Athletic fund-raising at NCAA Division I-A institutions. M.S. in Physical Education, 1984, 94 p. (R. J. Sabock)

The purpose of this study was to examine NCAA Division I-A athletic fund-raising programs with specific attention to revenues, structures, strategies, and problems. All 104 Division I-A institutions served as the study population. Directors of athletic fund-raising at each institution were sent a questionnaire developed by the investigator to study the areas mentioned above. A frequency analysis was performed for all 41 questionnaire items. The results indicated that Division I-A athletic fund-raising programs are generating increasingly sizeable revenues, and fund-raising is considered to be the likely source for augmenting athletic revenues in the mid-1980's. The most common type of Division I-A athletic fund-raising structure consists of a single organization soliciting funds fo the total athletic program. These organizations are highly accountable to athletic departments which have the discretion to use fund-raising revenues wherever needed. Although Division I-A programs utilize various strategies, they rely predominantly on face-to-face solicitation and the exchange of special benefits in return for contributions. According to Division I-A athletic fund-raising directors, their programs incur few sig problems. It was believed that athletic fund-raising did not lead to a loss of institutional control of the athletic program.

74. BRYANT, C. X. Effects of varied frequencies of strength training on strength retention. M.S. in Physical Education, 1984, 39 p. (K. G. Stoedefalke)

his investigation compared the diffs in strength aintenance of football players training at diff frequencies uring a 12-wk intercollegiate football season. Ss were 21 arsity members of the 1983 PA State University football eam, who selected one of three training groups (in equal umbers) with diff training frequencies (Group I--once per k, Group II--2 times per wk, Group III--3 times per wk). ll Ss participated in a 12-wk in-season wt training rogram. The training program was performed on Nautilus ariable resistance exercise equipment. All Ss performed ne set of 8-12 repetitions for each of 12 diff exercises. his program was designed to strengthen all major muscle roups along with the neck flexors and extensors. The esistance load for each exercise was determined by the max mount of wt a subject could move through a full range of tion for 8-12 repetitions (8-12-RM) for that exercise. sts for strength of the pectoral, quadricep, and deltoid scles were administered prior to, at the mid-point, and mediately following the training program. A Cybex okinetic dynamometer was used to measure the S's strength. ak force or torque production for a single max contraction s recorded as the strength value. Ms, SDs, absolute anges, % changes, and % retentions were calculated for the e-, mid-, and posttraining measures of all the variables r each of the 3 groups. A 2-way ANOVA revealed that for all tests there was no sig diff between the groups. Thus, all 3 training frequencies were equally effective in maintaining muscular strength. For all the variables tested, all groups maintained at least 96% of their strength, indicating the effectiveness of the in-season wt training program used in this investigation.

175. BUNCH, R. P. In-shoe pressure measurement during walking. M.S. in Physical Education, 1984, 110 p. (P. R. Cavanagh)

Pressure distribution under the foot/shoe was determined for 9 normal Ss (8 male, 1 female, ages 24-54) under 3 walking conditions. An insole with 499 discrete load transducers was used to generate a high resolution map of in-shoe pressure. Data was recorded for a barefoot condition and a second shod condition (at the shoe outsole) with a pressure sensitive capacitance mat. Ranges of impulse, peak force, and peak pressure were established for each region of the foot during each measurement condition. The impulse % in the metatarsal head regions was greater in the barefoot condition than the shod conditions. The under-shod condition revealed that the toe of the shoe is used to generate a high proportion of the propulsive impulse. Peak pressure was generally highest in the rearfoot regions over all footwear conditions. The sole of the shoe served to distribute the load such that peak pressures were lower for the under-shoe condition relative to the other 2. The analysis of regional peak forces, regional impulses and regional peak pressure produced results which served to document footwear effects during walking. In addition, a prototype of a high resolution pressure insole was tested and was shown to have potential in yielding clinically relevant data.

176. COCCIARDI, J. A. A comparison of structural stage fire brigades and incipient stage fire brigades at twenty-nine Pennsylvania Department of Public Welfare long-term intermediate-care institutions.

M.S. in Recreation and Parks, 1984, 78 p. (M. L. Christiansen)

The problem of fire safety is particularly acute in the hazardous locations of industry, institutions, public assembly and REC areas, and educational facilities, due to hazardous processes, limitations to ingress/egress, large fire loads and large occupancies. To combat these special problems, facilities may choose internal action in addition to reliance on the municipal fire service. The actions take the form of pre-positioning fire suppression equipment, evacuations, ad internal fire brigades. This thesis examined 29 similar facilities, operated by the Commonwealth of PA DEPT of Public Welfare. The facilities provided equipment and evacuations. To determine if advanced stages of internal fire suppression teams sig reduced property losses and fire casualties, the data for the S site (from January 1, 1983 through December 31, 1983) were analyzed by t-tests based on fire brigade type. Facilities providing advanced stages of fire brigades experienced reduced fire losses, but no to a sig level. These facilities suffered a higher casualty rate; however, this statistic was not sig.

177. DITTMAN, P. K. The effect of a low intensity cardiovascular training program on the resting blood pressure of essential hypertensive males. M.S. in Physical Education, 1984, 87 p. (C. A. Morehouse)

The purpose of this study was to determine the effect of a 12-wk walk/jog exercise program on the resting BP, resting HR, VO2 max, body wt, and % fat of a group of aerobically inactive middle-aged essential hypertensive men (M = 49.7 yrs). BP was measured by auscultatory sphygmomanometry, VO2 max by expired gas analysis, and % fat by skinfolds. A total of 14 volunteer Ss were assigned to either the treatment group (n=7) or the control group (n=7) such that the 2 groups were similar in initial resting BP. Only the treatment group participated in an exercise program during the study. This group met 3 times/wk for 30-45 min of walk/jog exercise at an intensity of 40-50% max HR reserve. Adherence to the prescribed exercise program was 88%. Data were collected at pre-test, mid-test, and post-test intervals. Between-group diffs in VO2 max were assessed using ANCOVA. All other between- and within-group comparisons were performed using t-tests. At the conclusion of the training period, systolic BP of the treatment group was sig less than and VO2 max sig greater than those of the control group. No sig changes occurred within the control group.

178. DONIVAN, J. M. A kinematic analysis of the three principal boxing punches. M.S. in Physical Education, 1984, 90 p. (C. A. Morehouse)

This study examined the effects of body size and glove wt on the displacement, duration, velocity, and acceleration of the gloved fist during the 3 principal boxing punches: jab, cross, and hook. The Ss, 9 male novice boxers, included 3 individuals in each of 3 wt categories: 130 to 135 lbs (lightweight), 152-165 lbs (middleweight), and 180-192 lbs (heavyweight). Each S executed each of the 3 punches while wearing the 8-, 12-, and 16-oz gloves with the order counterbalanced. All Ss executed the punches in the same sequence: jab, cross, and hook. The Ss directed their punches toward a head-high target on a standard practice bag. The high-speed films taken were analyzed to quantify the temporal and kinematic factors associated with each punch. These factors included total and absolute displacement, duration, velocity, and acceleration. The results for all kinematic variables demonstrated that, for this study, the type of punch executed was the major determinant of the magnitude of each factor studied. In general, body wt had little influence on the magnitude of the kinematic variables. Glove wt was also found to have little influence on these kinematic variables. The results demonstrated that the jab was sig quicker than the cross and hook, respectively. It was also found that the hook yielded the highest velocity of the 3 punches. Lastly, the results showed the technique employed can sig affect the resulting velocity of the gloved fist.

179. DUESING, L. Comparison of anxiety, confidence, and performance levels of male and female distance runners. M.S. in Physical Education, 1984, 64 p. (D. Harris)

This study examined competitive anxiety of male (n=24) and female (n=16) middle-distance and distance runners by determining trait anxiety and assessing state anxiety and confidence 15 mins prior to 4 performance situations (an easy, untimed practice; a hard, timed practice; a relatively easy early season race; and an important, late season race). The study also examined the relationship of state anxiety and performance under the 2 racing conditions. All Ss were administered SCAT prior to the season and the CSAI-2 prior to each performance situation. Coaches evaluated the race performances of all Ss. Results showed that there was no diff in competitive A-trait between males and females. No sig diff was indicated in cognitve and somatic state anxiety. Post-hoc tests revealed sig increases in cognitive anxiety from practice situation 1 to practice situation 2 and from each practice situation to each race situation. No diff was found in cognitive anxiety from race situation 1 to race situation 2. The same pattern existed for self-confidence. Somatic anxiety changed sig from race situation 1 to race situation 2 and from each practice situation to each race situation. There was no diff in somatic anxiety from practice situation 1 to practice situation 2. The only sex diff in somatic anxiety was indicated from race situation 1 to race situation 2, where males increased while females decreased slightly. Sig diffs were revealed between males and females in self-confidence, with men being higher in pre-performance self-confidence.

180. ENGLISH, D. B. K. Marketing interpretive programs: A description of interpretive product use markets

at national historic sites in the northeastern United States. M.S. in Recreation and Parks, 1984, 78 p. (D. R. Chase)

Interpretive services must relate to the audiences by whom they are to be consumed if these services are to be effective. Marketing, a process that matches products with consumers, has been adopted successfully in other areas of REC. By explicitly adopting a marketing orientation in interpretive product planning, interpreters can better understand their markets and increase the effectiveness of their products. This study explored the market for interpretive services at National Historic Sites and Monuments in the northeastern U.S., and described market segments in that market. The historic park market differs from the scenic/REC park market in several ways. The proportion of visitors who are senior citizens, who use personal interpretive programs, or who use no interpretive programs are higher than in the REC/scenic park market. The data indicated that users of personal interpretive programs are unlikely to be foreign or non-English speaking visitors, teenagers, or local visitors. The users of nonpersonal interpretation are likely to be foreigners or visitors who speak no English. The visitors to the parks who use no interpretation are likely to be teenagers.

181. GABLER, D. D. Effects of an aerobic conditioning program on lipoprotein fluctuations during the menstrual cycle. M.S. in Physical Education, 1984, 73 p. (J. Mendez)

Lipoprotein concentrations were measured during 4 phases of the menstrual cycle for 3 consecutive mos. to determine the effects of an aerobic conditioning program. 11 healthy, non-smoking women participated in this study: 5, ages 29-46 (M = 40), volunteered for the control group, and 6, ages 21-37 (M = 31), participated in a controlled running program (60-75% HRmax, 30 min/day, 3 days/wk, for 2 menstrual cycles). Pre- and post-test measures of % body fat ad VO2 max were determined and diet was determined by diet interview. The women did not show sig alterations in their lipoprotein concentrations following a moderate conditioning program. When compared to the control group, the aerobically trained women showed the same lipoprotein response from mo. 1 to mo. 3, despite a sig increase in their physical fitness as indicated by max 02 consumption. Cyclic hormonal fluctuations cannot explain the insig findings. No sig diffs were found in TC, HDL, LDL, or HDL/TC between groups for any phase within mos. 1, 2, or 3. Despite a sig lower TG concentration in the exercise group in the luteal phase of mo. 3, further analysis showed that this diff could not be attributed to the conditioning program itself. It was concluded that a moderate conditioning program leads to an improved aerobic capacity in women, but may not be associated with the alterations of lipoprotein concentrations often seen in men. The influence of hormonal fluctuations on lipoprotein concentrations within the menstrual cycle remains unclear.

182. GALLAGHER, S. *The effects of inspired wet bulb temperature on tissue temperatures of the tongue and hard palate.* M.S. in Physical Education, 1984, 76 p. (J. L. Hodgson)

6 healthy young men volunteered to serve as Ss to breathe room air or hot, humid air for a 60-min inhalation period in a 1 x 10 (tongue or palate temp x inspired wet bulb temp) within Ss design. The independent variables were 9 hot air conditions with elevated wet bulb conditions and one control test in which the Ss breathed room air. Tissue temps in the mount were measured by means of thermocouples placed on the tongue and hard palate. Core temp (T_{re}) and HR were also monitored during the testing sessions. The results of ANOVA on repeated measures showed sig increases in both tongue ($p<.001$) and hard palate ($p<.001$) tissue temps as a result of increasing wet bulb temps. Core temp ($p>.05$) and HR ($p>.05$) were not affected by inhalation of air with elevated wet bulb temps. The results indicate that inspired wet bulb

temp best describes the heat stress imposed upon the tissues of the mouth when breathing hot, humid air.

183. HARADA, M. The influence of occupational communities upon an individual's leisure experience. Ph.D. in Physical Education, 1984, 146 p. (G. C. Godbey)

2 recursive models were developed for this study. Data used were a part of the Quality of American Life Survey, and were obtained in 1978 through personal interviews with 3,692 persons 18 yrs of age and older. 2 models were analyzed to identify the structure underlying a set of categorical variables. The first model, the subjective model, involved the same variables except the fourth one: the level of participation in leisure pursuits. The results revealed that an occupational community played an important role as an intervening variable that existed between work rol and leisure satisfaction. On the other hand, the objective model indicated that work role was a common predictor for both the integration into occupational communities and the level of participation in leisure pursuits. These results implied that the accuracy of the prediction of an individual's subjective leisure experience can be increased by considering the concept of occupational communities.

184. HAYFORD, J. C. Muscular strength and girth changes in college age men following single vs. multiple sets of progressive resistance strength training. M.S. in Physical Education, 1984, 65 p. (J. L. Hodgson)

The purpose of this investigation was to compare the changes in muscular strength and girth following 10 wks of 1, 2, or 3 sets of Nautilus strength training exercise in college age males. 30 students enrolled in strength training classes at The PA State University volunteered as Ss, and trained all major muscle groups 3 days per wk using 8-12 repetitions per set. Strength and girth tests were administered prior to and upon completion of the 10-wk training program. Strength of the shoulder abductors, elbow flexors, and knee extensors was evaluated through the use of a Cybex II isokinetic device. Chest, upper arm, and thigh circumferences were measured using a centimeter tape. A 2-way ANOVA showed that all groups improved sig in shoulder abduction and bicep flexion muscle strength and upper arm girth, while knee extension muscle strength and chest and thigh girth did not improve sig. No sig diff existed between the strength or girth developed using single or multiple sets of exercise. Linear regression analysis showed that no sig r existed between increases in strength and increases in girth, except for the upper arm in the group performing two sets.

185. HENNIG, E. M. Pressure distribution under the impacting human foot during expected and unexpected falls. Ph.D. in Physical Education, 1984, 203 p. (P. R. Cavanagh)

The pressure ditribution under the right foot of 30 male Ss was determined for expected and unexpected falls from a ht of 20 cm. Ss were selected according to foot types (cavus, normal, planus). A piezolelectric pressure distribution platform with 1000 separate force transducers (resolution 7.6 mm by 7.6 mm) was used for fast data collection (200 Hz). For regional kinetic analysis the feet were divided into 10 anatomical regions: 2 rearfoot, 2 midfoot, 3 metatarsal head, and 3 toe regions. A 2-factor ANOVA was employed to statistically evaluate regional peak pressures and impulses for the 3 foot types under 2 falling conditions. The vertical peak force analysis revealed dramatically increased vertical peak forces during the unexpected falls but no diffs between foot types. The pressure analysis showed for unexpected falls high rearfoot pressures and for expected falls a concentration of load bearing in the lateral forefoot and midfoot regions. In both fall conditions the medial rearfoot pressures were higher than the lateral rearfoot pressures. Planus feet showed greatly increased midfoot pressures and reduced loads in the first metatarsal head region. Across all foot groups the cavus feet exhibited the highest peak pressures in the rearfoot and the first metatarsal head regions.

186. HOLDEN, J. P. The free moment of ground reaction in distance running and its change with pronation. M.S. in Physical Education, 1984, 107 p. (P. R. Cavanagh)

The free moment (Mz') of ground reaction was documented for 10 male Ss running at 4.5 m/s in shoes with midsole wedges which tended to place the feet into varus, neutral, or valgus positions during standing. Each S had normal arch hts, demonstrated a normal heel striking running style, and was not using foot orthoses. Data were collected for right and left feet in all 3 shoe types, and Kistler force platform outputs were processed digitally to determine the ground reaction forces and Mz'. The net transverse moment about a fixed ankle axis was also calculated for the neutral shoe trials. The increased pronation from varus to neutral to valgus shoes causes dramatic changes in the mediolateral force during the first 20% of foot contact. The trend showed a larger initial peak force applied medially to the foot, followed by a more delayed peak lateral force. Mz' acted on the foot in the direction of internal rotation during a majority of foot contact, with the largest magnitudes and the largest shoe type diffs being observed in the first half of contact. With increased pronation, the peak Mz' and the net angular impulse were sig increased in the direction of internal rotation.

187. HULLAH, J. The timing of a forward arm-swing response as a function of backswing and target speed. M.S. in Physical Education, 1984, 97 p. (R. W. Christina)

The timing of a rapid, forward arm-swing response in a receptor anticipation situation was investigated as a function of target speed, backswing, and practice. The timing of the forward arm-swing response made with a backswing was examined in relation to a) the response starting time, and b) the durations of the backswing, pause, and forward swing. 21 right-handed female students (ages 17-30 yrs) volunteered to be Ss. A 3x2x2 (Target Speed x Backswing Condition x Practice Phase) within-Ss design was employed. Ss performed 30 trials of the response for each of the 6 treatment conditions. The results revealed that the timing proficiency of the rapid, forward arm-swing response in terms of total error (terminal practice phase) and variable error (backswing condition) was a function of target speed. The back swing condition did not improve the Ss total error and absolute constant error. The within S correlations between constant error and the durations of the backswing, pause, forward swing, and starting time suggested that Ss seemed to program the entire response and corrected for constant error by adjusting their starting time.

188. JENKINS, J. The relationship between self-concept and health locus of control in adolescents. M.S. in Health Education, 1984, 61 p. (J. M. Eddy)

Ss were HS students (15-19 yrs old) currently enrolled in HE classes at the Williamsport (PA) HS. The 18-item Wallston and Wallston's Health Locus-of-Control Scale (3 subscales) and the 114-item Offer's Self-Image Questionnaire (10 subscales) were completed by 146 HS students enrolled in HE classes, representing a homogeneous group of adolescents. Ss were told that their anonymous participation was designed to assess how they think and feel about themselves and how they perceive their influence over their personal health status. Correlations were calculated between the subscales of the 2 instruments. The results showed that a statistically sig diff existed primarily between the Powerful Others health locus-of-control constant and 9 out of 10 subscales of Offer's Self-Image Questionnaire. These data indicated that those with a more positive self-concept tended to look more positively at the effects of Powerful Others with regard to their health locus of control and health status. In addition, a statistically sig diff was found between the Internal health locus-of-control subscale and the Family Relationships subscale of Offer's Self-Image Questionnaire. In this case, those Ss that indicated a more positive self-concept tended to look more positively on the effect that internal control plays with regard to their health status.

189. KENNEDY, M. C. An investigation of promotion strategies for marketing the athletic program at selected Division I colleges and universities. M.S. in Physical Education, 1984, 68 p. (R. J. Sabock)

A questionnaire was developed by the investigator to determine the importance of the use of promotion strategies for marketing an athletic program, the degree of success of each promotion strategy used, and the resulting level of satisfaction with sports promotion as evaluated by each institution. The final instrument included 15 questions and a chart. Based on recommendations from the Sports Promotions Director and the Sports Information Director of The PA State University, 60 Division I colleges and universities were selected as Ss in this study. The AD of each institution received a cover letter and questionnaire developed by the investigator and designed to explore the use of promotion strategies for marketing the athletic program. 43 (72%) respondents returned the questionnaires. A profile of the respondents was developed through descriptive statistics. Each item contained in the survey was analyzed by the use of 2 types of computer programs, TESSIA and FAWCS. A frequency analysis was used to describe the data in relation to geographic location. Results showed that promotion strategies such as tickets, attendance, direct mail, and the media serve as satisfactory uses and sources of revenue and as such help to market the athletic program. The increase of ticket sales and attendance and the use of corporate involvement in the promotion of intercollegiate sports serve as useful promotional tools and sources of revenue.

190. KLEINFELTER, E. R. The perceptions of female high school varsity basketball players toward their coach, and their gender preference. M.S. in Physical Education, 1984, 82 p. (R. J. Sabock)

A 3-part questionnaire was administered to a total of 286 Ss from 40 randomly selected SHSs in PA. Of the 40 schools, 20 had a female coach and 20 had a male coach for their girls' varsity basketball team. A X^2 analysis was used to compare the responses of those players with male coaches (49%) to those with female coaches (51%) on 31 coaches' descriptor items. The female coach was rated sig higher ($p<.05$) on 18 of the 31 descriptors, although the male coach received favorable ratings. A t-test analysis comparing the M scores of both male and female coaches indicated a sig higher score for the female coach. A X^2 was used to determine the overall gender preference for a basketball coach. The results indicated 43% of the players preferred a male coach, 42% preferred a female coach, and 15% had no preference. In addition, the players preferred the gender of their present coach. It was concluded from this study that both female and male coaches were considered effective by the Ss.

191. LAFORTUNE, M. A. The use of intra-cortical pins to measure the motion of the knee joint during walking. Ph.D. in Physical Education, 1984, 258 p. (P. R. Cavanagh)

The 3-dimensional kinematics of the patello-femoral and tibio-femoral joints were investigated during walking with 4 different types of footwear in 5 symptom-free Ss. Radio-opaque spheres were mounted onto target clusters that were attached to Steinmann traction pins inserted under local anesthesia into the femur, patella and tibia of the Ss. To obtain the spatial location of the bones during walking, the Direct Linear Transformation (DLT) technique of

Abdel-Aziz and Karara (1971) was applied to the X-ray recordings and to films taken simultaneously from diff locations. The relative motion between the bones was computed using an exact method combined with kinematic vectors. Thereafter, that relative motion was resolved into 3 translations and 3 rotations about the axes of a joint coordinate system (Grood and Suntay, 1983). Results indicated that intra-cortical pins were a successful and accurate technique in measuring the kinematics of the tibio-femoral joint, but less successful in measuring the kinematics of the patello-femoral joint due to poor pin fixation into the patella. A major finding of this study suggested that the "screw home" mechanism of the knee did not take place during walking. Concerning the use of diff footwear conditions, the numerous changes that those conditions brought about were rather small at the tibio-femoral and patello-femoral articulations. Yet, it was found that the valgus shoe condition caused the tibia tto rotate internally 3.5° more than the varus shoe during the middle part of the stance phase while the rotation of the tibio-femoral joint remained unchanged regardless of the footwear condition.

192. LONG, S. A comparison of participants and nonparticipants in employee fitness and health promotion programming. M.S. in Health Education, 1984, 82 p. (R. E. Shute)

This study evaluated the diffs among participants and nonparticipants in an employee fitness and health promotion program in a large pharmaceutical firm. 103 full-time employees of both sexes responded to a brief questionnaire which asked for their reasons for participating or not, their patterns for exercise, and several demographic variables. X^2 analysis revealed sig diffs between groups on only 3 factors: participants felt that a paid bonus would increase participation levels; nonparticipants were undecided whether a better leader would enhance participation levels; nonparticipants said they had a difficult time fitting the fitness program into their schedule. Although both groups felt that time off during the work day and better facilities would increase participation levels, it was concluded that lack of motivation and commitment are the reasons why nonparticipants do not participate. 2 demographic characteristics were tested between the 2 groups using independent t-test analysis with 1 sig diff being found; participants tended to have worked fewer yrs for the company than nonparticipants.

193. MAURER, G. J. The importance of shrub and clumped vegetation in supporting desirable songbirds in managed urban parks and open spaces. M.S. in Recreation and Parks, 1984, 73 p. (J. E. Elliott)

In order to assess the importance of shrub and clumped or aggregated vegetation as habitat elements for songbirds, songbirds were censused 8 times and 12 vegetational variables were measured for 30 park and open space sites in the Washington, D.C. area during 1980. Dependent variable (songbird species and songbird population measures) relationships with vegetational variables were described through least-squares regression analysis and r coefficients. 6 songbird species, desirable (native) songbird species diversity and abundance variables, and undesirable bird species (non-native species) abundance correlated sig with vegetational variables. Cardinal, catbird and desirable songbird diversity were positively associated with shrub volume, and clumped shrub volume variables. The explained variation (r^2) for these relationships were, respectively: cardinal (.42; .51), catbird (.35; .43), and desirable songbird diversity (.14; .19). Other notable positive associations involved desirable songbird diversity, desirable songbird species abundance, and catbird, cardinal, Carolina chickadee, mockingbird, and song sparrow species with total vegetation volume and woody plant species diversity. The results suggest that clumped or aggregated shrubs, and vegetation density and diversity, are important songbird habitat elements in managed urban parks and open spaces. Landscape planning and management practices that encourage songbird inhabitation were recommended.

194. MONISMITH, S. W. The impact of a court mandated education course on the knowledge, attitudes, opinions, and behavioral intentions of individuals arrested for driving under the influence of alcohol. D.Ed. in Health Education, 1984, 110 p. (R. W. St. Pierre)

Ss were 56 individuals who had been arrested for driving under the influence of alcohol, who were randomly assigned to either an exp or control group, with the exp group receiving the alcohol-highway safety education course. Both groups completed a pretest and posttest questionnaire that related to knowledge, attitudes, opinions, and behavioral intentions concerning drinking and driving. ANOVA was used to determine if sig interactions existed among M scores, and sig interactions were clarified with follow-up t-test. In addition, for the exp group, a 6-wk telephone follow-up of the behavioral intent portion of the questionnaire was administered. Findings from the exp indicated that sig diffs existed between the groups concerning knowledge, opinions, and behavioral intentions related to drinking and driving. Participation in the alcohol-highway safety education course by the exp group produced positive gains in all 3 of these variables. The most substantial gain occurred in knowledge concerning the effects of alcohol on driving skills. No sig diff was found between the groups in relation to change in attitudes about drinking and driving.

195. POHL, C. M. The effect of a 12-wk aerobic dance class on body image, self-image, and fitness in female college students. M.S. in Physical Education, 1984, 70 p. (L. I. Magnusson)

119 female college students participated in this study. 43 of those Ss were enrolled in 4 aerobic dance classes and served as the exp group, and 76 were enrolled in 1 of 8 HE classes and served as the control group. All classes met for a total of 15 wks. Body and self-image were assessed using Second and Jourard's Body and Self-Cathexis Scales and fitness was assessed by Cooper's 12-min run. Body image, self-image, and fitness were assessed on a pretest-posttest basis with a minimum time between testing occasions of 12 wks for all Ss. Gain scores were computed on body and self-image, and fitness, and independent t-tests were calculated to determine if the gains made by the exp group exceeded those made by the controls. Relationships between body and self-image, between fitness and body image, and between fitness and self-image were calculated. Conclusions were that participation in an aerobic dance class 3 times/wk, with intensity at least 60% max VO2 for 30 mins, may positively affect body and self-image and fitness; that there is a positive and moderate correlation between body and self-image; and that there is a low correlation between fitness and body image and fitness and self-image.

196. ROBINSON, W. J. The effects of skill level on EMG activity during internal and external imagery. M.S. in Physical Education, 1984, 76 p. (D. V. Harris)

The specificity of a localized response during imagery was investigated using 36 male/female volunteer Karate students randomly assigned to counter-balanced conditions of imagery perspective (internal/external) in a 2 x 2 x 2 (skill level x perspective x side) factorial design. EMG equipment was attached to Ss' arms over the deltoid muscle and 25-sec baselines were taken before and after taped relaxation/meditation instructions were presented. Ss listened to taped perspective manipulations in which they were instructed to perform 5 imaginary arm lifts. At an imagined horizontal position, 5-sec measures of EMG activity were recorded from each arm during each of 5 trials.

Between and after perspective manipulations other 25-sec baselines were taken. Ss then completed a questionnaire concerning success at performing the required images. A sig main effect ($p<.001$) indicated that the right side of the body generated more activity than the non-used side during imagery. A sig effect of skill level ($p<.05$) suggested that advanced Ss demonstrated greater M EMG responses than beginning students. Additionally, advanced students produced more activity in the arm that was utilized in imagery ($p<.01$) than in the other arm. Post-relaxation EMG baselines were lower ($p<.05$) than prerelaxation measures. No correlations existed between internal/external diff scores and responses to questionnaire items.

197. RODMAN, D. E. The effects of eccentric, concentric, and traditional strength training using Nautilus equipment on the muscular strength and fatigue in college women. M.S. in Physical Education, 1984, 57 p. (K. G. Stoedefalke)

Female (n=15) students enrolled in strength training classes at The PA State University volunteered to participate in the investigation. 1 group (n=4) engaged in a progressive resistance strength training program performing eccentric contractions, while a 2nd group (n=5) performed concentric contractions. The 3rd group (n=6) trained in the traditional manner, by performing the concentric and eccentric phase of each repetition. All groups followed a program of 1 set of 8-12 repetitions (8-12RM) on the Nautilus arm flexion machine, and 1 set of 10-15RM on the Nautilus compound leg machine, 3 days a wk for 11 wks. Tests for strength and fatigue were adminstered once before the training program began and again at the conclusion of the 11 wks. Strength and fatigue were evaluated using the Cybex II isokinetic dynamometer. Arm flexor and leg extensor girths were measured with a centimeter tape. Body composition was determined according to the method of Sloan, et al. (1962). The results of this investigation revealed that all groups experienced sig increases in arm strength, flexed and extended arm girths; and no change in leg strength, arm flexor fatigue, leg extensor fatigue, thigh girth, body wt, or % body fat. There were no diffs between the groups in any of the variables measured, with the exception of arm repetitions to fatigue. The Traditional group scored sig higher than the Eccentric group, but did not demonstrate a sig improvement between pre-and posttesting.

198. SCOTT, V. L. The effects of two different frequencies of jogging on maximal oxygen consumption and body composition of sedentary college-aged women. M.S. in Physical Education, 1984, 92 p. (J. L. Hodgson)

The effects of jogging 3 or 5 days/wk for 35 training days were compared using volunteer, sedentary, college-aged females (age=21 ± 2.5 years, wt=58 ± 7.2kg). Each S started jogging 1 mi then increased the distance .25 mi every 2 running days until continuously jogging 4.75 mi in a single session (95 total mi) at an intensity of 80% ± 5 bpm of max HR. Group I (n=11) jogged 3 days/wk for 12 wks and Group II (n=6) jogged 5 days/wk for 7 wks. Variables investigated were VO2 max, % body fat, abdominal and hip girth, resting and exercise BP and HR at pre and after 7 wks for both groups and after 12 wks for Group I. A Mixed Two-Factor Analysis revealed sig interaction between groups, and t-tests demonstrated sig increases in VO2 max, and lean body mass, and a reduction in % fat for both groups as a result of 35 days of jogging. There was no sig diff between the groups in improvement of VO2 max after 35 days of jogging (7.41 ml/kg/min vs 7.32 ml/kg/min). At 7 wks, 5x/wk resulted in a greater change in VO2 max than 3x/wk ($p<.05$).

199. SHERIDAN, L. T. The personal and professional backgrounds and roles of general managers of professional baseball, basketball, and football. M.S. in Physical Education, 1984, 59 p. (R. J. Sabock)

To determine the nature of the position of general manager (GM) of major professional sports, 76 chief executive officers in the front offices of the American and National Leagues in baseball, the NBA, and the NFL were mailed a 40-item questionnaire. A total of 33 responses were received which made a return rate of 43.4%. Individual responses were grouped into categories, summed, and % were calculated for each response. The average length of time in the position for all respondents was 5.1 yrs. Coach/assistant coach was the position most of the respondents held prior to becoming GM. The average age of the respondents was 48.4 yrs. The present salary of the majority of the respondents was above $100,000 per yr. The majority of the respondents had a college education and had worked in administrative positions in professional sports before becoming GM. The main administrative duty of the GMs concerning front office responsibilities was communicating by telephone. The main administrative duties of GMs concerning players and coaches/managers were negotiating contracts with players' agents and procuring players. According to the respondents, the most beneficial field of study for those aspiring to become a GM was business, and the most desirable or important courses of study were communication and business management.

200. SLAYBAUGH, H. L. Fish and Game Commission applicants: A physical performance profile. M.S. in Physical Education, 1984, 68 p. (K. G. Stoedefalke)

Physical performance of 1 woman and 45 men applicants for enforcement work as fish and game protectors was assessed by utilizing 16 performance variables measured on body characteristics, strength, VO2 max, anaerobic power, flexibility and swim testing. Relationships between the performance variables were compared by correlation. Smoking and hiring data were collected and used respectively to dichotomize applicants into matched subgroups. M diffs between matched subgroups were analyzed using t-tests and physical performance profiles were compared. Body fat (m = 21%) was higher for applicants than averages reported for men (12% to 15%) in other studies and was negatively related to performance. VO2 max (m = 42.8 ml/kg/min) of applicants was below the predicted level for 30-yr old moderately active men. Comparisons of Ms between smokers and non-smokers indicated only 1 sig diff. Smokers exhibited lower M time to swim 225m (400.5 secs vs 465.0 secs, $p<.05$). 3 M diffs were sig between hired and not hired applicants. Those hired had lower body fat (20.0% vs 24.8%, $p<.05$), higher VO2 max (43.9 ml/kg/min vs 37.7 ml/kg/min, $p<.05$) and did more sit-ups (38.8 vs 33.3, $p<.05$). It was concluded that identifiable diffs did occur between the profiles of those hired vs not hired. Overall, applicants demonstrated average strength, flexibility and anaerobic power. Low cardiovascular capacity was indicated, probably because of sedentary habits and high adiposity.

201. SMITH, R. W. An exploratory study of time use among parents of school-aged, physically disabled children. Ph.D. in Recreation and Parks, 1984, 176 p. (G. C. Godbey)

Interviews were conducted on Saturdays with the parents of 23 physically disabled children (n = 46). Each 4-part interview included (a) a demographic profile, (b) a 6-item Disabled Child Questionnaire, (c) a 24-hr time diary, and (d) an activity satisfaction questionnaire. 4 items of the Disabled Child Questionnaire, developed by the investigator, constituted the Physical Disability Rating Scale (PDRS). Saturday time use data from 119 households (n = 218) in a 1981 nationwide survey were selected for comparison. A 2x2 ANCOVA (sample group by gender) was used to test diffs in time use for each of 9 exhaustive subtotals. A regression was fitted to examine the relationship of selected child-related characteristics and Total Free Time, as well as Total Child Care, of parents of disabled children. Major conclusions were: (a) compared to parents nationwide, parents of physically disabled children use more time in child care activities ($p<.05$), and use less time for housework ($p=.055$); (b) the younger the child and the greater the degree of physical disability, the greater the child care requirements of parents; and (c) the PDRS is a promising parent-report instrument. In addition, there was an indication that parents of disabled children may share child care duties more equitably than parents nationwide.

202. SPONG, J. R. The history of the cervical cap: 1914-1983. M.S. in Health Education, 1984, 76 p. (R. E. Shute)

This thesis tracked development and use of the cervical cap from 1914 through the present. The neglect of this birth control device in the United States was examined and its current renaissance explained. Research utilized interviews, pamphlets, articles, books and the personal papers of such principals as Margaret Sanger and R. L. Dickinson. The cap's lapse into obscurity was attributed to inadequate technology, politically suspect advocates, foreign associations during wartime, confusion with other devices, and excessive conservatism in the medical profession. Revelations about side effects of the birth control pill were seen as responsible for a resurgence of interest in barrier methods in general and the cervical cap in particular. Given technological advances, a specific identity, and the sophisticated medical community of today, the cervical cap is predicted to become a viable birth control method.

203. STAVER, R. F. Factors that influenced male athletic scholarship from The Pennsylvania State University. M.S. in Physical Education, 1984, 90 p. (R. J. Sabock)

This investigation involved male athletes who accepted an athletic scholarship from The PA State University (PSU) between 1980 and 1984. A questionnaire, consisting of 41 statements and a rating scale, were used to collect data. A background data sheet, consisting of 7 questions, was attached to the questionnaire. A total of 210 questionnaires were sent to athletes on scholarship during the 1983-84 academic year. Of those 210, 165 were completed and returned. A 1-sample X^2 test of equal p was used to determine sig at the .05 level for each of the 41 statements. 13 statements were determined to be both sig and important in influencing male athletes to accept an athletic scholarship from PSU. 3 of those 13 were most frequently selected. They were: 1) academic standards at PSU; 2) employment opportunities after graduation; and 3) reputation of PSU in athletics. Efforts to determine major factors of influence by sport were inconclusive due to small sample size. The X^2 test indicated that there were diffs in the factors that influenced urban and non-urban athletes in their decisions to accept an athletic scholarship from PSU.

204. STREICH, J. P. Importance of wildlife to state park visitors. M.S. in Recreation and Parks, 1984, 50 p. (J. E. Elliott)

The shift from rural to urban lifestyles has been accompanied by a dramatic increase in nonconsumptive uses of wildlife. This factor has impacted natural-resource-agency policy, and although some studies have identified certain characteristics of nonconsumptive users, research on the human dimensions of wildlife is not complete. This study tested the hypothesis that there would be no diff in the satisfactions derived from wildlife among hunters, nonhunters, and antihunters. A sub-problem involved developing and testing an instrument to measure the importance of wildlife, and distinguish among hunters, non-hunters, and antihunters. A selected sample of day use visitors to 4 PA State Parks were surveyed during the winter of 1980-81. 129 surveys (95% return rate) were analyzed using frequency distributions, crossbreaks, and X^2 statistics. The hypothesis was not rejected ($p>.10$), although the results suggested that hunters derived more satisfaction from wildlife than either nonhunters or antihunters. Overall, 71% of the respondents indicated that wildlife was important to the state park visit. A majority (55%) of the respondents were willing to pay $.75 for a wildlife pamphlet. Some recommendations were made for state parks.

205. SYMONS, C. R. An assessment of the perceived value systems of former high school athletes and non-athletes. M.S. in Physical Education, 1984, 57 p. (R. J. Sabock)

The focus of this study was to determine if male freshman students from The PA State University who had participated in interscholastic athletics differed in their perceived value system from their peers who had not had an interscholastic experience. 367 males were surveyed, including 251 athletes and 116 non-athletes. All Ss were registered at the University during the Spring semester of 1984 and lived in the East Halls dormitory complex on campus. The instrument used to determine value structures was Rokeach's instrumental value survey in which Ss rank-ordered 18 values according to their personal value systems. Ss were surveyed over a 10-day period during January of 1984. A t-test was run comparing the M rank-orderings of the 2 populations. A 2nd t-test was conducted comparing the M rank-orderings of value statements to determine if diffs existed among the athletes of various sports. It was concluded that the athletes and non-athletes did not differ in their rank-orderings of the 18 value statements. However, the values "Ambitious" and "Imaginative" ranked higher by individual sport athletes while "Honest" ranked sig higher by team sport athletes.

206. TATANISH, C. A. An evaluation of the "Here's Looking at You, Two" drug and alcohol education curriculum. M.S. in Health Education, 1984, 92 p. (R. E. Shute)

This study examined the Here's Looking at You, Two curriculum in terms of the impact on 8th grade students' self-reported use and willingness to use various substances. Ss were students from 2 school districts in Central PA. 166 students were pretested from the exp school and 164 were posttested. In the control school, 294 students were pretested and 245 were posttested. Ss were pretested during their 7th grade year and posttested during 8th grade (the duration of the study from pretest to posttest was approximately 18 mos.). The instrument used to collect self-reported drug use data was the Primary Prevention Awareness, Attitude, and Usage Scales. All 8th grade students in the exp school received instruction in the Here's Looking at You, Two curriculum designed to be taught at the JHS level. The findings of this study were determined through a regression analysis model. The important finding was that the use of 3 of the 6 substances was sig lower in the school after students received the program. There were no stat sig changes in Ss willingness to use substances in the future.

207. VALIANT, G. A. A determination of the mechanical characteristics of the human heel pad in vivo. Ph.D. in Physical Education, 1984, 210 p. (P. R. Cavanagh)

The heel pads of 24 Ss were struck with an instrumented pendulum. Trials were made with and without a restraining device clamped about the heel. Peak force, % energy absorption, max deformation, and stiffness were determined. Double-exposure photographs were made simultaneously from 3 directions to measure the 3 dimensional displacement of skin markers on the heel. The response of the heel pad to steady-state vibrations was measured and compared to the response of a 3-component discrete element model. No diffs between the heel pads of runners and nonrunners were found. Peak force increased from 223 N to 437 N as pendulum impact velocity increased from 0.8 m/sec to 1.2 m/sec, respectively. The amount of energy absorption ranged from

84% to 99%, increasing 1% with each 0.2 m/sec increase in velocity, and decreasing 1% due to heel restraint. Estimates for stiffness, 7910 N/m and 105,646 N/m, were greater than previously reported values. Max deformation increased from 8.5 mm to 9.9 mm with increasing velocity, and decreased by 1 mm due to the heel restraint. It was concluded that the heel pad was a highly absorbing nonlinear viscoelastic substance. The reshaping of the heel pad in medial/lateral and in posterior directions was a mechanism for energy absorption. The 3-component discrete element model was an inappropriate representation of the heel pad.

208. VERCRUYSSEN, M. Carbon dioxide inhalation and information processing: Effects of an environmental stressor on cognition. Ph.D. in Physical Education, 1984, 191 p. (R. W. Christina)

This investigation was undertaken to determine whether breathing carbon dioxide (CO_2), a toxic environmental stressor, slows information processing and, if it does, whether the locus of this effect is in the encoding stage, the response selection stage, or both. In a 2 x 2 x 4 (Gas x Degradation x Compatibility x Time-on Task) within-Ss design, 6 highly practiced (more than 10,000 trials) male Ss performed a serial choice reaction time (SCRT) task while breathing either 4% CO_2 or room air. Task variables manipulated were stimulus degradation (intact vs. degraded) and stimulus-response compatibility (high vs. low). Data from each 20-min SCRT test were subdivided into 4 5-min intervals to determine the effects of time-on-task. Sig increases in SCRT resulted from breathing CO_2 ($p = .004$), degrading the stimulus ($p < .001$), lowering compatibility ($p = .004$), and increasing time-on-task ($p = .020$). Lowering compatibility served to exaggerate the impairment produced by CO_2 inhalation ($p = .038$). Time-on-task, however, did not interact with gas, degradation, or compatibility. According to the logic of the Additive Factors Method (Sternberg, 1969), these findings support the following conclusions: (1) breathing 4% CO_2 slows information processing, (2) the locus of this effect is associated with the response selection stage of processing, and (3) the progressive deterioration in performance due to increases in time-on-task affects both the encoding and response selection stages in a similar manner.

209. WEAVER, A. M. Status of women's varsity intercollegiate athletics in the eastern United States in 1984, and changes since 1971. M.S. in Physical Education, 1984, 93 p. (R. J. Sabock)

A questionnaire was mailed to the person responsible for coordinating the women's varsity intercollegiate athletic program in each of 132 selected colleges and universities to gather information regarding women's athletic programs and competition. Specific questions related to female undergraduate enrollment; size of budget; national governing organization; title, gender, and educational level of the coordinator; and coaching responsibilities as they related to faculty workload. Information was also gathered in regard to competition in various sports, including no. of contests, gender of head coach, scholarships, and time involvement in practice sessions, and the % and no. of schools sponsoring teams in the various sports was determined. Results revealed that in NCAA Division I and II colleges and universities and those institutions without membership in national governing organizations, 38.6% of the head coaches were male, in comparison to 44.9% in NCAA Division III, NAIA, and NJCAA institutions. The NCAA Division I and II colleges and universities and those institutions without membership in a national governing organization reported that 85.7% of their administrators were women, compared to 57.9% in NCAA Division II, NAIA, and NJCAA. The NCAA Division III, NAIA, and NJCAA institutions reported 59.3% of their administrators also coached in 1984.

210. WOLFORD, A. J. Target speed and backswing as determinants of the timing of a rapid, forward arm-swing response. M.S. in Physical Education, 1984, 80 p. (R. W. Christina)

The overall timing of a rapid, forward arm-swing respons relative to the arrival of a target in a recepto anticipation situation was studied as a function of 3 targe speeds in the presence and absence of a backswing. Th design was a 2 x 2 x 3 x 3 (Backswing Condition x Practic Phase x Set x Target Speed) with repeated measures on th last 3 factors. 24 female Ss (18-30 yrs of age) wer randomly assigned to 1 of 2 groups, with the restrictio that each group have 12 Ss. Each group performed 270 trial of the forward arm-swing response either with or without backswing. The results revealed the no-backswing group ha sig less total, constant, and absolute constant timing erro than the backswing group. Both groups had sig less total absolute constant, and variable timing error in the termina phase of practice than in the initial phase. Over bot phases of practice at the 3-mph target speed, timin accuracy (constant and absolute constant error) an consistency (variable error) were essentially the same fo both groups. Over both phases of practice, at the 5-mp target speed, timing accuracy was similar for both groups but greater timing consistency was found for thos performing without a backswing. Over both phases o practice, at the 7-mph target speed, timing accuracy wa greater, but timing consistency was less for Ss respondin without a backswing than for those performing with backswing.

211. WRIGHT, S. M. The relationship between leisure participation levels across later life stages and leisure satisfaction in older adults. M.S. in Recreation and Parks, 1984, 123 p. (H. M. Lundegren)

The study was conducted in June 1983 with 117 senior citizens, 60 yrs and older, from a residential camp in VT. The short form of the Leisure Satisfaction Scale (LSS) was used to assess leisure satisfaction. Additionally, a Leisure Activity Scale (LAS) was administered to yield a measure for the range of involvement in past and current leisure activities. Patterns representing the diffs between past and current scores were consolidated into the following variation indices; expansion, constriction, same and total change. Assigning leisure satisfaction as the dependent variable, zero-order correlation and multiple regression were used to test its relationships with the variation indices. The results indicated that a greater no. of leisure activities of older adults are maintained, added, or are participated in with greater frequency than the no. of activities deleted or participated in with less frequency across later life stages. There was no statistical relationship between the present range of involvement in leisure activities and the overall level of leisure satisfaction. Although no sig, the findings do seem to indicate some existence of a noteworthy association. Additionally, there was no statistical relationship between leisure participation patterns over time and overall leisure satisfaction.

212. YANAGA, B. H. The use of submaximal exercise to increase the rate of nitrogen washout in lean, intermediate, and obese men and the subsequent calculation of body fatness. M.S. in Physical Education, 1984, 67 p. (J. L. Hodgson)

The rate of N2 elimination from the body while breathing O2 was examined during submax exercise in men of varied body fatness. 9 college-aged men were categorized according to % fat (i.e., <10%, 11%-19%, >20%) as determined by underwater weighing. Each S performed 1 to 3 N2 washouts on separate days. Exercise intensity was such that V_E = 20 l/min (BTPS). Washout curves were plotted semilogarithmically and characterized by nonlinear regression analysis. The slope and intercept of the final washout component were determined for each trial. Statistical analyses of slope, intercept, volume of N2 eliminated, and volume of N2 eliminated per unit ht each indicated poor test-retest reliability ($p < 0.01$). No statistically sig diffs were noted between the S groups among the above variables. An attempt was made to quantify body fatness based on the volume of N2 eliminated from the final washout component, the solubility coefficient of N2 in lipid at $37^{\circ}C$, and an estimate of the average % of lipid comprising the body fat mass. The high degree of variability associated with the method made the use of N2 washout impractical for assessing body fatness and diffs in the rate of N2 elimination between S groups. High values for calculated fat mass ($M = 172.2$ kg) indicated that a large volume of atmospheric N2 leaked or diffused into the breathing circuit, a methodological error was present, or the final N2 washout component represents N2 eliminated from depots in addition to the body fat stores.

213. YOUNG, W. R. A study of the effects of varying the amount of humeral rotation on torque development in the iron cross position. M.S. in Physical Education, 1984, 85 p. (P. R. Cavanagh)

18 Ss - 8 gymnasts and 10 non-gymnasts - were recruited to test the effect that varying the amount of humeral rotation would have on isometric shoulder adduction in an iron cross position. The forces measured were compared for 5 positions of humeral rotation varying from an extreme lateral (PHR 1) to an extreme medial position (PHR 5). Torques needed to hold an iron cross were then estimated and compared to torques calculated from measured forces. The results showed that strength increased sig as the humerus rotated from PHR 1 to PHR 5. The estimated torques needed to hold a regular grip cross were found to be about 14% greater than those needed to hold a false grip cross (a technique which shortens the lever arm). The iron cross is held from PHR 3 (midway between extreme medial and lateral rotation) to PHR

5. It was found that as the humerus rotated from PHR 3 to PHR 5, torque increased 12%. This suggests that medial rotation of the humerus may be as important as the false grip when trying to generate enough force to hold an iron cross on the still rings.

PORTLAND STATE UNIVERSITY
PORTLAND, OREGON

214. HESSLINK, R. L. The effects of a combined weight training and running program on body composition in college males. MST in Physical Education, 1983, 64 p. (M. Svoboda)

215. QUERY, L. M. Body weight changes throughout the menstrual cycle and their effect upon the components of body composition. MST in Physical Education, 1984, 43 p. (M. Svoboda)

PURDUE UNIVERSITY (C. J. Widule)
WEST LAFAYETTE, INDIANA

216. ANN, B-H. A kinematic and kinetic analysis of tae kwon do kicking motions. M.S., 1984, 76 p. (C. J. Widule)

217. ABST, R. J. A model program coordinating nutrition education and aerobic fitness training as applied to elementary school students. M.S., 1984, 68 p. (D. L. Corrigan)

218. BERRY, K. L. An identification and comparison of sport socializing influences. M.S., 1984, 38 p. (A. A. Annarino)

219. BLAIR, C. S. The effect of dehydration and subsequent rehydration on plasma volume changes and high power performance. M.S., 1984, 47 p. (D. L. Corrigan)

220. BLOHM, M. A. Dehydration and high power performance: effects of rehydration with a high carbohydrate drink. M.S., 1984, 47 p. (D. L. Corrigan)

221. BOLING, B. A study of the relationships between motor fitness, mathematical and intellectual achievement. M.S., 1984, 34 p. (A. A. Annarino)

222. CHODZKO-ZAJKO, W. J. Relationships between plasma cortisol, dexamethasone suppressed cortisol, physical fitness and emotionality in adult males. Ph.D., 1984, 221 p. (A. H. Ismail & H. N. Zelaznik)

223. CONNORS, D. F. Growth factor involvement in overload-induced hypertrophy of skeletal muscle. Ph.D., 1984, 101 p. (D. L. Corrigan)

224. DEWEY, J. E. A comparison between selected health screening and health risk appraisal (HRA) variables of health status and health risk. Ph.D., 1984, 236 p. (R. Seehafer)

225. DUNCAN, M. A hermeneutic on human play. Ph.D., 1984, 343 p. (W. Harper)

Research focused on the possibility for the philosophical theme of freedom to provide thematic continuity in the extant play literature. The purpose was to shed light on the experience of play and to unify an otherwise chaotic and diverse collection of play theories.

226. FRANK, A. L. The relationship of religious experience to state-trait anxiety. M.S., 1984, 81 p. (G. C. Hyner)

227. HUANG, P. A kinematic analysis of the 400m hurdles. M.S., 1984, 37 p. (C. J. Widule)

228. KOR, A. The effect of acute vs gradual thermal dehydration on plasma volume. M.S., 1984, 45 p. (D. L. Corrigan)

229. MIHALOV, L. C. A study of the effects of glucose polymer drink on performance time, plasma volume changes, rectal temperature, and sweat rate during a prolonged exercise bout. M.S., 1984, 84 p. (C. L. Melby)

230. MONE, S. M. Temporal precision as a condition for a linear speed-accuracy trade-off in aimed movements. M.S., 1984, 31 p. (H. N. Zelaznik)

231. MOWERY, A. A kinematic analysis of the golf swing. M.S., 1984, 61 p. (C. J. Widule)

232. SCHMIDT, W. D. The effects of chronic and acute dehydration on high power exercise performance. M.S., 1984, 41 p. (D. L. Corrigan)

233. WILLIAMS, T. J. The effects of glucose polymer feedings on respiratory exchange ratios, lactates, and endurance performance. M.S., 1984, 58 p. (D. L. Corrigan)

234. YONG, M. G. The effects of acute exercise on platelet aggregation and platelet glutathione peroxidase activity in man. M.S., 1984, 56 p. (D. L. Corrigan)

235. ZINSELMEIER, S. E. A physical fitness intervention program for elementary schools. M.S., 1984, 101 p. (A. A. Annarino)

SAN JOSE STATE UNIVERSITY (E. L. Lundquist)
SAN JOSE, CALIFORNIA

236. HOGAN, J. Cardiovascular fitness for the post-

stroke victim on beta-adrenergic blockade medication. M.A. in Physical Education, 1984. (E. L. Lundquist)

To find if a positive relationship existed between cardiovascular conditioning and submaximal HR in poststroke victims on beta-adrenergic blockade medication, 9 male Ss between 57 and 77 yrs participated in a 6-wk training program which consisted of walking or jogging in the water for 20 mins 3 times per wk. Ss exercised at a pace strenuous enough to maintain a Propranolol adjusted training HR. Submaximal exercise HRs were monitored and compared during pre and posttraining tests which consisted of a 5 min walk in the pool. The sig diff between pre and posttests ($t = 2.46$, $df = 8$, $p<.05$) demonstrated the ability of this population to benefit from a cardiovascular training program. The mean HR reduction was 10% demonstrating that a cardiovascular fitness training program in the aquatic environment is a realistic program for the poststroke victim.

237. PROPSTER, T. A. The effects of breathing 100% oxygen on repetitive power outputs. M.A. in Physical Education, 1984, 61 p. (C. L. Christensen)

This investigation examined the effects of breathing 100% O2 during recovery on power output (PO), HR, and V_E during subsequent high intensity workbouts. 8 male athletes M age 21 ± 1.7 yrs performed 2 sessions of 30-sec high intensity bouts of exercise on a Monarch bicycle ergometer with 1-min rest periods separating the work bouts. During rest periods of 1 session, Ss breathed 100% O2 or room air prior to the investigators and Ss entering the lab. Following a brief warmup, resistance was set at 3.5 kp and the S pedalled as rapidly as he could during each 30-sec workbout. HRs were collected during the last 15 sec of exercise and recovery; V_E was measured continuously. One-way ANOVA with repeated measures revealed no sig diffs in POs, HRs during exercise and recovery, or V_Es during exercise or recovery (p>.05). These results indicate that breathing 100% 02 did not enhance the S's ability to perform repeated short-term high intensity bouts of exercise on a bicycle ergometer nor did it improve the S's cardiorespiratory recovery from exercise. Thus, it appeared that the use of 100% 02 to enhance recovery may be unwarranted.

238. REVERE, M. K. A study of intercondylar notch size and its relationship to anterior cruciate ligament injuries. M.A. in Physical Education, 1984, 42 p. (J. Roush)

This study examined the relationship between femoral intercondylar notch size and anterior cruciate ligament (ACL) sprains. Case histories for 60 female Ss (age 12-77 yrs) and 140 male Ss (age 15-56 yrs) were evaluated, and each S was classified as having an ACL sprain (ACL group) or having an injury other than an ACL sprain (NON-ACL group). An intercondylar x-ray view of the posterior knee was examined to determine the width of the most distal narrowest opening of the intercondylar notch (B) and the widest breadth between the distal femoral condyles (A). A notch ratio was computed for each subject (NR = B/A). A point biserial correlation was performed (r = -0.38) to determine the correlation between the notch ratio for each S and the type of injury the S incurred. A Student t demonstrated a sig relationship between intercondylar notch size (ratio) and ACL sprains. The results of this study could help orthopedic surgeons to increase their understanding of the etiology of ACL sprains and serve as a basis for developing a treatment program for the prevention of ACL injuries.

239. SCOTT, M. G. A comparison of a circuit strength training program and a sport activity program as measured by performance on the AAHPERD Youth Fitness Test. M.A. in Physical Education, 1984, 52 p. (C. L. Christensen)

The effects of a combination sport activities and weight training (WT) program were compared with the effects of a sport activities (SA) program on fitness levels as measured by the 1975 AAHPERD Youth Fitness Test. 54 male Ss, 11 to 14 yrs old participated in the study. The WT group was composed of Ss with a M age of 13.5 ± .52 and the SA group was composed of Ss with a M age of 12.5 ± .68. The WT group participated in a combination of weight training and sport activities while the SA group participated in a straight sport activities program. Both groups were tested before and after 8 wks of activities using the AAHPERD Youth Fitness Test. Ss in both groups showed a sig improvement (p<.01) in several of the test items. The WT group improved in pull-ups, shuttle-run, standing long jump, and the 50 yd dash. The SA group improved in sit-ups, shuttle run, standing long jump, and the 50-yd dash. Using the ANCOVA, only the pull-ups showed a sig improvement in the ST group over the SA group. Circuit strength training can be an effective tool for improving fitness in a school PE program. The WT program was not found to be superior to the SA program.

240. SCHILLAGE, M. A. *The effects of a 10 week aerobic dance program on the development of VO2max.* M.A. in Human Performance, 1984. (J. Cavanaugh)

The purpose of this study was to determine if a 10 wk aerobic dance program performed 2 days per wk, for 14-22 mins per day, would sig improve VO2max in 14 women, aged 17-33 yrs. All Ss performed a pre-and post VO2max treadmill test. The training program was designed with progressive increases in intensity of 65% of max HR for 14 mins. The duration and intensity of each session increased every 2 wks so that by the 8th wk the Ss were working at 85% of max HR for 22 mins. The results of paired t tests indicated no sig improvement in VO2max (p>.05) as a result of the training. It was concluded that a 10 wk aerobic dance training program performed 2 days per wk, with progressive increases in intensity (65-85% max HR) and duration (14-22 mins/day) does not sig improve VO2max.

241. TOBIAS, R. J. Effects of massage as post-exercise recovery on subsequent performance of a three-mile run. M.A. in Physical Education, 1984, 111 p. (J. R. Roush)

This study examined the effect of massage as a recovery technique on subsequent running performance (as measured by run time and perceived exertions) and on state anxiety. Data were analyzed for 16 intermediate runners (10 females, 6 males) with an age range of 18-52 yrs. Ss were tested for a 3-mile track run 24 hrs after a 30-min massage or a 30-min rest period. Results indicated that previous day's massage had no sig effect ($p<0.05$) on perceived exertions; run times were seen to improve as a result of learning and motivational influences. Massage sig reduced state anxiety ($p<0.05$) when compared to non-massage scores.

242. YOST, G. M. The effect of initial muscle glycogen levels on serum urea nitrogen levels during submaximal exercise. M.A. in Physical Education, 1984, 56 p. (C. L. Christensen)

SIMON FRASER UNIVERSITY

243. CALANCIE, B. M. Motor unit characteristics of flexor carpi radialis muscle in man. Ph.D. in Kinesiology, 1984. (P. Bawa)

244. DRINKWATER, D. J. An anatomically derived method for the anthropometric estimation of human body composition. Ph.D. in Kinesiology, 1984. (W. D. Ross)

245. GEE, P. Mechanisms of cytotoxicity of 6-Hydroxydopamine: Roles of oxygen free radicals and the effects of scavengers. Ph.D. in Biochemistry, 1984. (A. J. Davison)

246. ROSS, K. A. Lung development in newborn guinea pigs and the effects of endurance exercise. M.S. in Kinesiology, 1984. (E. W. Banister)

247. SCIARRETTA, D. A. The effects of instructions on motoneuron excitability and the gain of reflexes. M.S. in Kinesiology, 1984. (P. Bawa)

248. WALLERSTEINER, U. Ergonomic impact of technological change in offices and supermarkets. M.S. in Kinesiology, 1984. (T. J. Smith)

249. WARD, H. D. An investigation of the health and fatigue effects resulting from video display terminal usage. M.S. in Kinesiology, 1983. (J. Dickinson)

SLIPPERY ROCK UNIVERSITY (P. Zimmerman)
SLIPPERY ROCK, PENNSYLVANIA

250. AMEEN, T. H. Peronality traits related to success in coaching tennis. M.Ed. in Physical Education, 1984, 60 p. (J. L. McKeag)

During the 1984 spring semester 21 successful male tennis coaches from colleges, universities, SHSs, JHSs, and clubs participated in a research project which utilized Cattell's 16 PF. The questionnaire was employed to measure personality traits of each S. On 4 of the 16 factors, the Ss' M deviations were diff from the general male population M of 5.5. Sig diffs were found on factors B, E, I, and Q_4. The high M of these factors indicates that successful tennis coaches are more intelligent, more assertive, more tender-minded, and more tense when compared to the general male population. On the other 12 factors, the S scores were similar to the general male population. A comparison of the personality traits of the 21 male tennis coaches indicated that they were more similar to each other than diff.

251. CALIFORNIA, L. A physical fitness profile of high school age students. M.S. in Physical Education, 1984, 57 p. (G. S. Pechar)

Physical fitness factors of Kane, PA, Area HS students were compared with national AAHPERD Health Related Physical Fitness Test norms. 396 students, 202 male and 194 female, participated in the study. M, SD and AAHPERD % ranks were reported according to age and sex for the one mile run, triceps and subscapular skinfold thickness, one min sit-up, and sit and reach tests. In relation to AAHPERD national norms, Ss ranked average to above average in cardiorespiratory endurance, muscular strength and endurance, and flexibility and below average in body composition. Sig sex diff existed in every age group in every test, with the exception of the 18 yr olds in flexibility. No sig diff existed between male M scores for the diff age groups or between female M scores for the diff age groups in any of the test items.

252. HEIM, T. M. An investigation of respiratory quotient values during a steady state 24 hour period. M.S. in Physical Education, 1984, 56 p. (C. D. Clinger)

This study investigated RQ values on an hourly basis over a 24 hr period to determine if there was an optimal time of day that the body relied on fat metabolism in a resting state. A sample of 12 females between the ages of 18 and 25 were restricted to a caloric intake equal to their basal metabolic rates. The Ss were under the supervision of the investigator for the complete 24 hr period. Expired O2 was collected for 5 mins each hr except those hrs of feeding.

The expired air was analyzed using the OM-11 Beckman 02 analyzer and the LB-2 Beckman CO2 analyzer. % of CO2 and % of 02 were determined from the analysis and RQ values were assessed. The times during which the highest % of fat was utilized for energy were between 3 and 6 hrs following a meal.

253. HOGLUND, J. L. The effects of a 12-week cardiovascular exercise program on the resting blood pressure, body weight and resting heart rate levels of hypertensive individuals. M.S. in Physical Education, 1984, 69 p. (F. J. Brannon)

The data used in this study were obtained from pre- and post-test information on permanent record cards and weekly record sheets kept on file at Bio-Energetiks Clinic (Warrendale, PA). 10 individuals with medically diagnosed essential hypertension participated in a 12-wk cardiovascular exercise program, 3 times per wk for 45 to 60 min sessions. Ss chosen for this study were medicated with diuretics and exhibited a 75% compliance to the exercise program. The data were analyzed through the use of the t-test for dependent samples. Where diffs were found, further analysis was attained through use of the ANOVA for dependent samples and Scheffe's test. Sig decreases ($p<0.05$) were found in the maximal systolic BP and the recovery diastolic CP. Sig decreases ($p<0.01$) were found in the maximal diastolic BP, body wt and the maximal HR. Sig increases ($p<0.01$) were found in the physical work performance as indicated in METS. Sig diffs were not found in the resting systolic and diastolic BP, recovery systolic BP and the resting and recovery HR.

254. MYERS, L. S. A study of factors influencing Division I and Division II female, recruited student-athletes' decisions to attentd the college/university of choice. M.S. in Physical Education, 1984, 44 p. (J. L. McKeag)

The purpose of this study was to determine if there were sig diffs among responses to selected factors influencing Division I and Division II female, recruited student-athletes' decisions to attend the college/university of choice. 46 of 64 solicited Ss responded to a questionnaire. The Chi-square test of independence was utilized to analyze the data. Results indicated that Division I female, recruited student-athletes were more influenced by athletic scholarships and athletic facilities when compared with Division II female, recruited student-athletes in their decision to attend the college-university of choice. Combined group responses (70%) indicated that the academic program at the college/university, the head coach at the college/university, and the personality of the recruiter were very influential factors in the female student-athletes' decision to attend the college/university of choice.

255. SMITH, C. M. A comparison of the effectiveness of the flutter kick and the dolphin kick after the pushoff from a backstroke turn. M.S. in Physical Education, 1984, 32 p. (G. S. Pechar)

Cinematographical analysis techniques were utilized to investigate the performance times for the flutter kick (FK) and the dolphin kick (DK) after the pushoff from the pool wall until the swimmers had crossed a finish line 7 yds away. 9 female and 7 male varsity swimmers at Slippery Rock University volunteered as Ss. Each S was filmed performing 3 trials utilizing the FK and 3 trials utilizing the DK. The result of a dependent t-test between the performance times for the 2 kicks was not sig. There was no diff between a swimmer who utilized a FK as compared to a DK in the time after the pushoff from the pool wall until the apex of the swimmer's head crossed the finish line 7 yds away.

256. STENGER, L. A. The effects of body inversion on blood pressure and heart rate. M.S. in Physical Education, 1984, 50 p. (C. D. Clinger)

This study involved 30 volunteers. Each S attended 9 exp sessions over a 3 wk period. During each session the S was required to maintain a vertical position for 3 min, while the investigator monitored HR and systolic and diastolic BP each min. This same procedure was duplicated as the S moved to a horizontal and inverted position. An ANOVA for dependent samples was used to investigate HR and BP as the S was moved in each of the 3 positions. A Scheffe's Multiple Comparison test was used to investigate which of the M differed. The systolic and diastolic BP increased sig while the HR decreased sig at the $p<.01$ and $p<.05$ levels, respectively. It was concluded that inversion causes the BP to rise to hypertensive levels and that these devices should be used with caution.

SOUTH DAKOTA STATE UNIVERSITY

257. WOODEN, S. M. The effects of a circuit weight training program on body composition, muscular endurance, and muscular strength in untrained females. M.S., 1984, 76 p. (J. E. Lidstone)

17 untrained female Ss volunteered for either the exp group (EG) (N=13) or the control group (CG) (N=4). All Ss were pre and posttested for total body weight (TBW), body density (BD), % body fat (%BF), lean body weight (LBW), muscular endurance (ME), and muscular strength (MS). The EG participated in a circuit wt training (CWT) program, lifting a minimum of 40% of a 1 repetition maximum for 30 sec (12-15 repetitions) at each station, and resting 40 sec between stations. Lifts were made at 8 stations for 3 circuits, 3 days per wk, for 11 wks. A students' t test for correlated M and an ANOVA were computed. The CG showed no sig change from pretest to posttest on any of the 6 variables measured

(TBW, BD, %BF, LBW, ME, MS). The EG had no sig change in TBW but had a sig change (p<.05) in BD, %BF, LBW, ME, and MS from pretest to posttest. There was no sig diff in TBW change between groups, but there was a sig diff in change for BD, %BF, LBW, ME, and MS between groups as a result of the CWT program.

SOUTHEAST MISSOURI STATE UNIVERSITY (R. F. Kirby)
CAPE GIRARDEAU, MISSOURI

258. MUELLER, E. E. Psychological and physiological effects of aerobics. M.A.T. in Physical Education, 1985, 90 p. (P. Murray)

The purpose of this study was to compare changes in cardiorespiratory endurance (CR) and body image of randomly selected college age female Ss enrolled in an aerobic dance course and Ss enrolled in an intermediate swimming course. 28 Ss from 3 sections of aerobic dance classes were pre-tested on CR by using Cooper's 12 Min Run/Walk Test. 28 Ss from 3 sections of intermediate swimming classes were pre-tested on CR by using the 12 Minute Swimming Test. Body image was measured by using the Body Cathexis Scale. 2 control groups (1 running and 1 swimming) each consisting of 32 Ss from 3 sections of bowling classes, were pre-tested on CR and body image using the same tests as previously described. The Ss continued to participate in their respective activity classes and were post-tested after an 8 wk period in the same manner as previously described for the pre-test. In the study, t-tests of M gain were used to treat the data at the .05 level of sig. A sig diff between the M gain from pre-test to post-test was found for the aerobic dance group when compared to the running control group in CR. No sig diff of M gains were found from pre-test to post-test when the aerobic dance group was compared to the intermediate swimming group, or when the intermediate swimming group was compared to the swimming control group in CR. No sig diff of M gains for body image from pre-test to post-test were found in any of the groups tested. It was concluded that aerobic dance probably does not contribute to more of an increase in CR than intermediate swimming, and that neither aerobic dance nor intermediate swimming appear to sig change body image.

259. WILLIAMS, T. A. The effects of long distance throwing and weight training on throwing velocity. M.A.T. in Physical Education, 1985, 45 p. (R. F. Kirby)

7 Southeast MO State University players participated in the exp group which performed long distance throwing 2 times a wk and weight training 3 times a wk. 7 players participated in the control group who performed weight training 3 times a wk without long distance throwing. A pre-test was given to determine initial throwing velocity using a radar gun. Following a 4-1/2 wk period a post-test was given to determine final velocity. No sig diffs were found within groups from the pre-test to the post-test. No sig diffs were found between groups from the pre-test to the post-test. It was concluded that long distance throwing and weight training did not increase throwing velocity.

SOUTHERN ILLINOIS UNIVERSITY (R. G. Knowlton)
CARBONDALE, ILLINOIS

260. BEVIS, B. P. The effect of induced-delayed muscle soreness on the electromyographic activity in the biceps brachii. M.S. in Physical Education, 1984, 53 p. (R. G. Knowlton)

17 college age males were selected as Ss with 12 being assigned to a treatment group and 5 being assigned to a control group. EMG data were collected on 3 consecutive days. Electrical output was expressed as uV per sec and uV per sec per lb of isometric force generated. The treatment group completed a wt lifting protocol following the EMG measurements on the first day. A subjective soreness evaluation was completed prior to EMG testing on the second

and third days. All of the exp Ss developed moderate to severe soreness during the second and third days of testing. uV per sec increased sig during the initial phase of the 60% of max isometric contraction held until fatigue developed. uV per sec per lb of force demonstrated sig increases at all 3 of the integrated samples with days 2 and 3 being higher than the first day ($p<.05$). Isometric maximum strength decreased sig ($p=0.05$) for the exp Ss but remained unchanged for the controls. It was concluded that induced-delayed muscle soreness resulted in a sig increase in the EMG output of the biceps brachii. Also, delayed onset muscle soreness resulted in a sig decrease in isometric strength. On the average this change equaled 25%.

261. GOLDEN, D. A comparison of the translational and rotational kinematics of increasing rotation in springboard diving. Ph.D. in Physical Education, 1984, 183 p. (L. A. Good)

Changes in takeoff kinematics associated with increasing rotational requirements of selected dives were examined and related to changes in the dive translation and rotation. 4 elite male divers were filmed performing 2 trials each of the back and reverse dives, back and reverse 1 1/2 somersaults, back and reverse 2 1/2 somersaults in pike position. Takeoff variables calculated included: body segment angles and angular velocities; relative joint angles and velocities; springboard angle, and body lean. Freefall variables included: takeoff angle, horizontal and vertical velocity C.O.G., and average somersault velocity. Within and between dive group diffs for each takeoff and freefall variable were tested by ANOVA. Takeoff variables affecting dive translation and rotation were determined by linear regression. Results revealed that as somersault rotation increased, Ss attained sig linear increases ($p<0.05$) in segmental angular velocities and changes in body positions which were most related to dive translation and rotation. Sig increases ($p<0.01$) in lean occurred in backward group takeoffs. Performing more somersaults resulted in increased horizontal velocity associated with increased body lean, takeoff angle, and trunk angular velocity at takeoff (R^2=.85). Vertical velocity decreased and was associated with arm position during springboard depression (R^2=.40). Increased vertical velocity was associated with greater springboard depression (R^2=.50). Somersault velocity was related to trunk velocity (R^2=.95) at takeoff.

262. HETZLER, R. K. The effect of a low energy expenditure warm-up on plasma free fatty acid responses and calculated substrate utilization during submaximal exercise. M.S. in Physical Education, 1984, 123 p. (R. G. Knowlton)

Repeated post-prandial measures were obtained on 5 endurance trained Ss (M VO2 max = 68.7 ml/kg/min) running at approximately 66% of their max aerobic power for 40 min preceded by rest or by a 20 min walk at approximately 27% of their maximal aerobic power. The % of energy (calculated indirectly from steady state respiratory quotients) derived from fat metabolism was sig higher in the run preceded by walking ($p<.05$). It was calculated that a M of 29.5 gm of carbohydrate was spared by the warm-up procedure. No statistical diff were found in the FFA concentrations between trails. However, the trial preceded by the walking warm-up displayed FFA concentrations above resting levels at sampling periods during the run. The trial preceded by rest showed a fall in FFA concentration after the first 10 min of exercise, a return to resting level after 20 min and elevated concentrations at 40 min of running. It was concluded that a low energy expenditure warm-up is beneficial in prolonged endurance events due to the sparing of carbohydrate.

263. KAMINSKY, L. A. The relationship of total body fat and oxygen uptake capacity with fat metabolism following prolonged walking. Ph.D. in Physical Education, 1984, 131 p. (R. G. Knowlton)

14 men aged 20-31 yrs with a M % of body fat of 17.9 (range of 7.5-30%) and a M aerobic capacity of 47.7 ml O2/kg/min (range of 35.1-66.3) were studied following an overnight fast. Each S walked for 1 hr of passive recovery. Venous blood samples were analyzed for serum free fatty acids (FFA) and glycerol. There was a tendency (P = 0.08) for Ss with higher aerobic capacities to have a larger increase in their glycerol concentration during exercise than Ss with lower aerobic capcities. The Ss with higher aerobic capacities had a larger post-exercise FFA concentration peak and subsequently cleared these extra FFA from the blood more quickly than Ss with lower aerobic capacities (p<.05). A similar relationship was found between aerobic capacity and the recovery FFA/glycerol molar ratio response (p<0.05). Body composition and aerobic capacity were not related to the post-exercise glycerol response, nor was body composition related to the recovery FFA or FFA/glycerol molar ratio responses. It was concluded that more FFA were utilized during recovery in Ss with higher aerobic capacities than in those with lower aerobic capacities. There was no evidence that body composition was related to post-exercise fat metabolism.

SOUTHWEST TEXAS STATE UNIVERSITY (H. H. Avent)
SAN MARCOS, TEXAS

264. CARLISLE, S. M. Relationship of personality characteristics and performance areas of women basketball players in the Big State Conference. M.A. in Physical Education, 1985, 69 p. (H. H. Avent)

Performance statistics and personality measures (Cattell 16PF) were obtained from 49 women intercollegiate basketball players in the Big State Conference. Sig (p<.05) but low r's were found between aver points/game and factor M (-.293) and between aver rebounds/game and factors E (-.314), L (-.350), N (.3314) and I (-.305). No sig relationships were found between field goal or free throw percentages and 16PF.

Ss tended to be more concrete in thinking, tough-minded and practical than the 16PF norm. Stepwise discriminant analysis resulted in one sig function (p<.05) which explained 44% of group differences. High and low performance groups were differentiated from the middle group but not from each other. Of the 8 factors included in the function, 2 were of major importance (more intelligent vs. less intelligent and self assured vs. apprehensive) with high and low performers scoring higher on the factors of intelligence and self-assurance than the middle group.

265. PRICE, L. R. Biomechanical comparison of the grab and conventional sprint starts of female age group swimmers. M.A. in Physical Education, 1985, 60 p. (H. H. Avent)

6 women (15-16 yrs) were selected according to their US swimming classifications in order to compare the grab and conventional starts in swimming with respect to horizontal velocity at takeoff, angular acceleration at takeoff and entry, and the path of motion for the center of mass. Cinematographic data were collected while the Ss performed 2 trials of each type of start under simulated race conditions. Results of paired t-tests indicated no sig diff between the 2 starts with respect to horizontal velocity at takeoff (23.65 M1 and 20.84 M2), angular acceleration at takeoff (1019.11 M1 and -90.31 M2), or angular acceleration at entry (-732.2 M1 and 706.2 M2). Although horizontal velocity at takeoff was found to be slightly faster when the swimmers used the grab start, these diff were not sig. Angular acceleration at takeoff was greater when using the grab start although not sig. The parabolic path of motion in the conventional start was observed to be flatter, with greater acceleration.

266. ZETTS, R. A. Comparison of high density lipoprotein levels between vegetarian and non-vegetarian females. M.A. in Physical Education, 1985, 31 p. (H. H. Avent)

6 vegetarian (aged 23.5 ± 4.7 yrs) and 6 non-vegetarian (24.5 ± 5.8 yrs) female non-smokers who were not taking oral contraceptives underwent max voluntary graded exercise testing. No sig diff existed between ht, wt, % body fat, resting HR, max HR, or max treadmill time. Fasting blood samples were analyzed for total cholesterol, triglycerides, HDL, and TC to HDL ratio. TC (mg/dl) and HDL (mg/dl) were sig diff at the .05 level (TC:veg 153.5±17.7, non-veg 175.6±13.7; HDL: veg 50.3±10.5, non-veg 57.8±12.5). TG and TC/HDL were not sig diff (TG:veg 76.6±38.2, non-veg 82.0±33.0; TC/HDL:veg 3.1±0.8, non-veg 2.6±0.4). Even though TC and HDL were sig diff, the non-sig diff in TC/HDL ratio suggests that vegetarian and non-vegetarian diets lead to similar risks for cardiovascular disease.

SPRINGFIELD COLLEGE (W. J. Sullivan)
SPRINGFIELD, MASSACHUSETTS

267. ANDERSON, C. R. *The status of authoritarian thinking, foreclosed thinking, and sex-role identification among college coaches.* D.P.E., 1984, 121 p. (M. Murray)

This study was designed to determine whether differences existed in authoritarian thinking, foreclosed thinking, and sex-role identification between men and women coaches and among these same coaches grouped by sport. Ss were 906 coaches of basketball, soccer, lacrosse, gymnastics, tennis, golf, and swimming representing East Coast colleges and universities. Authoritarian thinking was assessed through the use of the F-Scale, foreclosed thinking was measured by the Objective Measure of Ego-Identity Status, and sex-role identification was determined through the use of the Bem Sex-Role Inventory. A chi-square established that the groups were not proportional, thus necessitating the use of SPSS Option 9 to accommodate the inequality of groups when the three 2 x 7 ANOVAs were run. Results indicated that men coaches were more authoritarian in their thinking than women coaches, that foreclosure in thinking was related to the sport coached by an individual, and that although both men and women coaches were found to be androgynous the women were more androgynous than the men.

268. COOPER, P. Analysis of a stress management program for female psychiatric patients. D.P.E., 1984, 173 p. (B. Jensen)

Ss for this investigation were 164 female psychiatric patients at an acute psychiatric hospital. 111 Ss participated in a stress management program (E group) while 53 (C group) did not. All Ss in the C group and 43 Ss in the E group participated in a therapeutic exercise program. The dependent variable was length of stay at the hospital. Analysis of data was by ANOVA, t, and zero-order and multiple regression. The following conclusions were reached: no. of days from the start of a stress management program until discharge is the best predictor of length of stay; the higher the no. of previous admissions, the more likely a patient assigned to the stress management program will be readmitted; patients assigned to the stress management program are able to remain in the community longer than patients not participating in the program.

269. COUGHLIN, M. The effects of goal setting on basketball foul-shooting performance. M.S. in Psycho-Physical Movement, 1984, 74 p. (B. Jensen)

Ss for this study were members of 3 female varsity high school basketball teams. 2 teams were randomly assigned to an E group and one team was assigned to a C group. All Ss participated in a skill-building program designed to improve basketball foul-shooting ability. All were administered a foul-shooting accuracy test consisting of 20 free throws taken 2 at a time, 4 times during the 7 wks of the study. Ss in the E group participated in goal-setting conferences with the investigator after each of the 4 testing sessions. Athletes in the E group were instructed to set goals which were realistic, positive, attainable, and based on their past performances. A 2 x 4 ANOVA with repeated measures on the second factor (testing periods) was used to analyze the data. No diff (p>.05) were found between the two groups in foul-shooting performance. No diff (p>.05) were found in foul-shooting performances across the 4 testing sessions. Also, no diff effect or interaction was found between the testing sessions and the 2 groups (E and C).

270. DE SOUZA, M. J. The relationship of menstruation to perceived exertion and time to fatigue. M.S. in Physical Education, 1984, 150 p. (M. Murray)

Ss for this investigation were 17 female athletes who had been running a minimum of 25 mi/wk for at least 1 yr. 12 Ss were normally menstruating and 5 were amenorrheic. All Ss performed a continuous progressive exercise test to exhaustion on a treadmill during 4 phases of the menstrual cycle at which times RPE and TF were measured. The design was a 2 (Amenorrheic/Normal) x 4 (Phases of Cycle) mixed design with repeated measures on phases of the cycle. Analysis demonstrated no diff (p > .05) in RPE and TF between the amenorrheic and normal Ss. There were no diff in RPE and TF among the 4 phases of the menstrual cycle.

271. DEVOE, D. An assessment of a stress challenge program for adjudicated juveniles. M.S. in Physical Education, 1984, 58 p. (J. Genasci)

Ss for this study were 312 male juvenile delinquents between 13-17 yrs of age. They were referred by the courts or the DEPT of Youth Services of the Commonwealth of MA. The Ss participated in and successfully completed the Homeward Bound program. All Ss were administered the Rotter Incomplete Sentences Blank test prior to and following completion of the 26 day Homeward Bound program. A t-test for repeated measures was used to analyze the data. Self concept was found to be more positive (p<.05) for the posttest testing period than for the pretest testing period.

272. DOODY, M. A comparison of attitudes of elementary school pupils involved in daily physical education with those involved in a two session/week program. M.S. in Physical Education, 1984, 56 p. (W. Sullivan)

Ss for this study were 240 male and female fourth, fifth and sixth grade students. One group of Ss were from a school involved in daily PE while the other Ss were involved in twice per wk PE. All Ss were administered an attitude survey developed by Fred L. Martens. A 3 factor design ANOVA was used to determine if there was any diff in attitude toward PE between Ss involved in daily PE and those involved in twice a wk PE. The 3 factors were sex, grades and program. No diff ($p>.05$) in attitude toward PE was found between the 2 groups. One interactive effect (sex x grade) was found to be sig. Further analysis of simple effects found a sig F ratio at the seventh grade level. Seventh grade males had a more positive attitude toward PE than seventh grade females.

273. FRUH, J. M. The relationship between subtalar joint angle and incidence of injury in high school track athletes. M.S. in Physical Education, 1984, 107 p. (H. J. Scheuchenzuber)

Ss for this study, 16 male and 24 female high school track athletes, were volunteers and had no previous lower extremity injuries. The Ss subtalar joint angles were calculated by the Law of Cosines. Incidence of injury (IC), foot injury rating (ROF), ankle injury rating (ROA), lower leg injury rating (ROL), knee injury rating (ROK) and overall injury rating (RO) were gathered by post-season questionnaire. An independent groups t-ratio was used to determine if a diff existed between male and female subtalar joint angles. A Pearson product-moment correlation procedure was used to determine the relationships between subtalar joint angle and the variables of IC, ROF, ROA, ROL, ROK, and RO. The female subtalar joint angle was found to be sig ($p<.05$) larger than the male subtalar joint angle. The relationship between female subtalar joint angle and IC was found to be sig ($p<.05$) different from 0. The female track athletes with higher subtalar joint angles had a higher incidence of injury. No sig ($p>.05$) relationships were found between male subtalar joint angle and the variables of IC, ROF, ROA, ROL, ROK, and RO, or between female subtalar joint angle and the variables of ROF, ROA, ROL, ROK, and RO.

274. IP, C. The effect of electrical stimulation on the strength of elbow extension of college-age females tested isometrically and isokinetically. M.S. in Physical Education, 1984, 61 p. (W. Sullivan)

Ss for this study were 16 college-age females. They were randomly assigned to an E group or a C group. The Ss in the E group underwent a 3-wk (5 sessions per wk) electrical stimulation strength training program on the triceps of their nondominant arms. The C group was not involved in any upper body strength training program. All Ss were pretested and posttested isometrically and isokinetically on Cybex equipment for elbow extension of their nondominant arms at limb speed of $0^\circ/\text{sec}^2$ (elbow set at a 170° angle of extension), $30^\circ/\text{sec}^2$, and $180^\circ/\text{sec}^2$. A 2 x 3 mixed ANOVA with repated measures on the second factor (limb speeds) was used to analyze the data. No diff ($p>.05$) was found between the 2 groups in strength gains at the $180^\circ/\text{sec}^2$ limb speed. Electrical stimulation was found to increase strength ($p<.05$) at the $0^\circ/\text{sec}^2$ limb speed and decrease strength ($p<.05$) at the $30^\circ/\text{sec}^2$ limb speed.

275. KAIN, J. B. The effects of various forms of stabilization on the rectus abdominis during isometric knee extension. M.S. in Physical Education, 1984, 73 p. (T. Sanford)

Ss for this study were 28 male volunteer college students aged 18-35 yrs. The study was divided into 2 phases. The first phase involved each S performing 3 max isometric knee extensions at 60° of knee flexion with no stabilization other than gravity and body wt. 90% of the highest value was used as a baseline for quadriceps' output. In the second phase of the study each S's rectus abdominis EMG output was monitored while varying the types of external stabilization. Each S performed 3 isometric knee extensions at 60° of knee flexion with each type of stability condition. The conditions were: 1) no stabilization other than body wt. and gravity, 2) thigh stabilization, 3) thigh and pelvis stabilization, 4) thigh, pelvis and hand stabilization, and 5) thigh, pelvis, hand, and back stabilization. Using a pre-randomized order of stabilization conditions the EMG output of the rectus abdominis on the ipsilateral side of the testing leg was measured. When the S exerted to the baseline output determined in the first phase of the study, the rectus abdominis output was measured and recorded. These readings for each of the conditions were averaged to obtain an overall value. A repeated measures ANOVA was used to analyze the data. Sig diffs ($p<.05$) were found for the 5 stability conditions. A Neuman-Keuls' multiple comparison test identified further sig diff among the M. No sig diff was found between the no stability and thigh stability condition, $p>.05$, for decreasing rectus abdominis output. All other conditions were statistically sig for decreasing rectus abdominis output during isometric knee extension at 60° of knee flexion ($p<.05$).

276. LYNCH, P. The attitudes of students toward the required physical education program at Minnechaug Regional high school, Wilbraham, Massachusetts. M.S. in Physical Education, 1983, 89 p. (J. Parks)

416 students in grades 9, 10, 11 and 12 were administered the Kenyon Attitude Toward Physical Activity Scale, Form D. The 9th and 10th grade students were enrolled in a

traditional PE program while the 11th and 12th grade students were enrolled in a selective program. ANOVA was used for analysis. No diff (p>.05) were found among the grade levels in total attitude scores. However, 11th grade students showed more positive attitudes in the subdomain of pursuit of vertigo and more negative attitudes in the subdomain of social experience than the students in grades 9, 10 and 12. Both 9th and 11th grade students held more negative attitudes in the subdomain of aesthetic experience than 10th and 12th grade students.

277. MANN, B. L. A sport-specific measure of attentional style. D.P.E., 1984, 187 p. (M. Murray)

The purpose of the study was to determine the validity and reliability of a sport-specific adaptation of Nideffer's Test of Attentional and Interpersonal Style (TAIS). The revised scale, the Golf-TAS, included only the attentional subscales of the TAIS (TAS). Ss were 43 members of the Ladies Professional Golf Association. Content validity of the Golf-TAS was established with the assistance of 28 sport psychologists from throughout the U.S. Statistical treatment of the data included factor analysis of the Golf-TAS, convergent validity of the TAS and Golf-TAS, alpha reliability of the subscales of the Golf-TAS, and a discriminant function analysis of the Golf-TAS. The factor analysis of the Golf-TAS did not support the factor structure of the TAIS. The Pearson product-moment correlation of .56 was reflective of an acceptable convergent validity coefficient. 3 of the 6 subscales failed to reveal an acceptable reliability level, which indicated that the unidimensionality of the subscale items was questionable. The 2-wk test-retest reliability coefficient of the Golf-TAS was .86. This estimate was representative of the stability of the Golf-TAS and further suggested that a specific frame of reference may contribute to a more accurate measurement of attentional style. The scores of the Golf-TAS were also utilized to determine the capacity of the test to differentiate attentional styles between more and less successful professional golfers. The MANOVA procedures revealed no sig diff between the 2 groups.

278. READ, B. A comparison of selected aspects of basal and exercise metabolism in amenorrheic and regularly mensing runners. M.S. in Physical Education, 1984, 143 p. (M. Murray)

Ss for this study were 5 amenorrheic and 5 regularly mensing women ages 21-45, who were running a minimum of 20 mi/wk. On the first day of testing, Ss performed a max oxygen uptake test on a treadmill. On the second test day, Ss underwent a basal metabolic rate (BMR) test followed by a 30 min treadmill run at 60% of their max aerobic power. Principles of indirect calorimetry were employed using a Beckman Metabolic Cart to determine each S's BMR, basal substrate utilization, and each S's exercising energy expenditure and substrate utilization during the 30 min treadmill run. Blood drawn from the antecubital area immediately following the BMR test and 10 min after the treadmill run was analyzed for serum triglyceride content and lipoprotein lipase activity. Due to the small sample sizes descriptive statistics were used to analyze the data. To provide further information dependent variables were also treated with a one-way ANOVA. Serum triglycerides and lipoprotein lipase activity, however, were treated with a 2 x 2 mixed design ANOVA. The BMR of the amenorrheic runners was found to be lower ($p < .05$) than that of the regularly mensing runners. No diff were found between the 2 groups ($p > .05$) with respect to basal substrate utilization. Basal protein utilization, however, very nearly approached sig($p=0.051$) which suggests that the amenorrheic runners utilized more protein under basal conditions than the regularly mensing runners. No diff ($p > .05$) were found between the 2 groups in energy expenditure and exercising substrate utilization. In addition, no diff ($p > .05$) were found in basal and post exercising serum triglycerides and lipoprotein lipase activity between the 2 groups.

279. SALKE, R. C. The effect of anabolic-androgenic steroids on left ventricular size in bodybuilders: An echocardiographic study. M.S. in Physical Education, 1984, 110 p. (E. Burke)

45 males from the New England area were classified into 3 comparison groups of 15 Ss each: bodybuilders who used anabolic steroids, bodybuilder who did not use anabolic steroids, and a C group of untrained individuals who had never used steroids. Echocardiograms from the Ss were utilized to determine whether anabolic steroid use affected left ventricular anatomical components and functions. The thickness of the interventricular septum (VS) and the posterior wall (LVPW) ad the diameter of the left ventricular cavity at end systole (Ds) and end diastole (Dd) were measured for each S and the M of the 3 groups were compared. There were no diff in VS, LVPW, Ds, and Dd between the 2 groups of bodybuilders. The absolute thicknesses VS and LVPW were larger for the bodybuilders than for the C group. There were no diff in Ds and Dd among the 3 comparison groups. The ratios of VS/LVPW, VS/Ds, and VS/Dd were also larger for the bodybuilders than for the C group, but again there were no diff between the 2 groups of bodybuilders. There were no diff in % shortening of the internal dimension among the 3 comparison groups. The data indicate that anabolic steroids do not exert any additional influence on concentric left ventricular hypertrophy beyond that attained through weightlifting.

280. SHEEHAN, J. M. A comparison of four treadmill protocols designed for the measurement of maximum oxygen uptake in 10 to 12-year-old boys. M.S. in Physical Education, 1984, 110 p. (E. Burke)

Ss for this study were 16 boys ages 10 to 12. Prior to testing all Ss were administered a treadmill familiarization session. All Ss performed 4 max treadmill tests of continuous walking, continuous running, intermittent running, and continuous handrail running. The tests were administered in a balanced order with the use of a 4 x 4 Latin Square design. There was an interval of between 7 to 10 days between tests. The criteria for the attainment of VO2 max were: a plateau in VO2, HR, RPE, respiratory quotient, and administrator assessment. The dependent variables of absolute VO2 max, relative VO2 max, and max ventilation were analyzed using a Latin Square repeated measures ANOVA. The Newman-Keuls multiple comparisons analysis was used to follow up sig F ratios. No diff (p>.05) were found among the variable M across the 4 testing days, indicating that no carryover effect existed. The absolute and relative VO2 max scores for the 3 running protocols were found to be higher (p<.05) than for the walking test. No diff (p>.05) was found among the 3 running tests. The max ventiiation scores for the 3 running tests were found to be higher (p<.05) than for the walking test. The max ventilation for the intermittent run was found to be higher (p<.05) than for the continuous run and for the handrail run. No difference (p>.05) was found between the max ventilation scores for the continuous run and the handrail run.

281. STERNER, T. Relationship between percent body fat as determined by visual estimation and underwater hydrostatic weighing. M.S. in Physical Education, 1984, 80 p. (E. Burke)

Ss for this study were 71 male volunteers from the Greater Springfield area, MA. Each S's % body fat was determined using underwater hydrostatic weighing (criterion measure) and skinfold analysis (predictor variable). In addition, each S posed for front, R side, and rear fullbody color slides. 2 expert raters viewed the slides. While using a series of reference photographs as guides, they visually estimated % body fat for each S. A correlation coefficient was computed between each predictor variable and the criterion measure. Correlation coefficients were converted to Fisher Z scores. Fisher Z scores were compared against each other. None were found to be sig (p>.05) diff.

282. TRICHKA, R. The effect of competition upon the expression of aggression. Thesis, 1984, 74 p. (J. Genasci)

Ss for this study were 24 male intercollegiate singles tennis players from selected New England colleges and universities. All Ss were administered the Rosenzweig Picture Frustration Study (RPFS) prior to the start of the competitive tennis season. Post-testing, utilizing the RPFS, occurred immediately following a loss in an intercollegiate singles tennis match. The t-test for correlated M was utilized to analyze the diff between the pre-test and post-test scores. No diff ($p>.05$) were found in the scores of obstacle-dominance and ego-defense types of aggression. Need-persistence scores were found to be lower ($p<.05$). Intrapunitive and impunitive scores for directions of aggression were found to be lower ($p<.05$). Extra-punitive scores for direction of aggression were found to be higher ($p<.05$) following a loss in an intercollegiate singles tennis match.

283. VINCENT, P. A. Analysis of the 4 mmole per liter level of blood lactate and time to fatigue. M.S. in Physical Education, 1984, 111 p. (E. Burke)

The purpose of this study was to determine the effects of work intensity on endurance performance as measured by blood lactate concentration. 10 highly trained runners (M 5 mi run time = 28.18 min) volunteered to participate in the study. 2 graded intermittent treadmill tests were used to identify a work intensity paralleled by a 4 mmole/l concentration of blood lactate. The first test was used to determine a general range of 4 mmole/l level using respiratory parameters while the second test was more finely graded with blood lactates being obtained at each workload. The work intensity paralleled by a 4 mmole/l blood lactate concentration corresponded to a M RPE of 14.2 and 83.75% of VO2 max. Workloads were set at energy expenditure levels which were both above and below 5% of VO2max as well as at the intensity paralleled by a 4 mmoles/l level of blood lactate. During the subsequent 1 wk period the Ss reported back to the laboratory 3 times with the intent to exercise to exhaustion at the work intensities identified above. A test was terminated following one hr of running. At the lowest work intensity, the M time to fatigue was 50.53 min (5 runners ran the full hr) with a blood lactate value of 4.08 mmoles/l. At the 2 higher intensities there was a sig ($p<.05$) decrease in time to fatigue, M = 38.42 min and M = 24.22 min respectively, with a sig ($p<.05$) increase in post exercise blood lactate concentration, M = 5.26 and M = 7.47, respectively. These findings suggest that in order for an endurance athlete to run for long distances, athletes should work at or below an intensity which produces a blood lactate concentration of 4 mmoles/l.

ST. CLOUD UNIVERSITY
ST. CLOUD, MINNESOTA

284. BRAITH, R. W. Effects of specific muscle training on cardiorespiratory kinetics. M.S. in Special Studies: Exercise Physiology, 1984, 141 p. (J. M. Kelly)

285. EMBRETSON, M. A. Fasttrack: Computerized organization of interscholastic track and field meets. M.S. in Physical Education, 1984, 94 p. (R. G. Waxlax)

286. JOHNSON, S. P. A comparative study designed to measure the attentional style of three groups of high school quarterbacks. M.S. in Physical Education, 1984, 55 p. (J. D. Kasper)

TEMPLE UNIVERSITY (M. G. Owen)
PHILADELPHIA, PENNSYLVANIA

287. ASHWORTH, S. E. Effects of training in Mosston's spectrum of teaching styles on the feedback

behavior of teachers. Ed.D. in Physical Education, 1984, 227 p. (M. S. Goldberger)

288. BACCILE, S. Energy cost of females working in neutral and hot environments. M.Ed. in Physical Education, 1984, 64 p. (A. M. Paolone)

289. CHAMBERS, R. L. Sportsmanship in a sporting America: Tradition, ideal, reality. Ed.D. in Physical Education, 1984, 346 p. (B. D. Lockhart)

290. CICCARELLI, D. L. A review of the historical and sociological perspectives involved in the acceptance of soccer as a professional sport in the United States. Ed.D. in Physical Education, 1984, 166 p. (M. W. Jackson)

291. DAVIES, M. S. Impacting trait anxiety and psychological well-being in incarcerated delinquents through the use of SCUBA training. Ed.D. in Physical Education, 1984, 198 p. (C. A. Oglesby)

292. FINNEY, M. B. Cultural and physiological factors influencing the gap between American women's and men's distance running performance. M.Ed. in Physical Education, 1984, 150 p. (B. D. Lockhart)

293. SIEVERS, C. G. A history of the women's sports teams in the Southeastern Conference through records and statistics of competition 1973-1982. Ed.D. in Physical Education, 1984, 598 p. (B. D. Lockhart)

294. STEFFEN, C. A. Dose response of estradiol on exercise induced myocardial glycogen metabolism. M.Ed. in Physical Education, 1984, 89 p. (Z. V. Kendrick)

295. STERRETT, J. D. Development and promotion officers and athletic revenues: Selected characteristics of NCAA member institutions. Ed.D. in Physical Education, 1984, 158 p. (M. W. Jackson)

296. TROUP, J. T. The effect of acetylsalicylic acid administration on metabolic cardiovascular, and thermoregulatory function in young males during acute exercise in hot and neutral environments. Ph.D. in Physical Education, 1984, 134 p. (Z. V. Kendrick)

TEXAM A&M UNIVERSITY (L. J. Dowell)
COLLEGE STATION, TEXAS

297. BREWER, R. E. Factors influencing retention of new nursing graduates in hospital and professional practice. Ph.D. in Health Education, 1982, 186 p. (H. Tolson)

The purposes of this study were to investigate sources of new graduates' information about their first jobs as professional nurses in order to predict the accuracy of their expectations for the job, and to investigate the association of early job experiences with adjustment to hospital and professional practice. Diploma, associate degree and baccalaureate degree graduates were Ss prior to beginning work and at 3 mos and 6 mos following entry into the work force. Data analysis included multiple regression analysis, canonical r analysis and content analysis. It was found that innaccurate expectations for the job were associated with negative adjustment to the job, the organization and to the nursing profession, while accurate expectations were associated with positive responses. Other factors associated with positive responses to the job, the organization and to nursing included smaller work groups, the presence of a friendship network in the job, provision of role information and the presence of supportive relationships. Work rewards such as pay, the opportunity to learn and gain experience, and satisfaction with the job and work, were also associated with positive adjustment to the job and to nursing.

298. MCKENZIE, C. A. A study of baccalaureate nursing faculty and student selection of actual and ideal student role models in clinical teaching.

The purpose of this study was to compare baccalaureate student nurses and nursing faculty in terms of their selections of actual and ideal student role models for each of 7 behaviors that comprise the professional nursing role. A questionnaire was developed and sent to 453 baccalaureate nursing students and 80 baccalaureate nursing faculty in a southeastern state. Returns included 68% of the students and 63.7% of the faculty. Descriptive statistics were used to analyze the demographic data, and the hypotheses were tested by X^2. Results showed baccalaureate nursing students and faculty differed in their selection of nursing positions which they believe serve as most appropriate ideal student role models and with regard to their selections of actual vs. ideal student role models.

299. SMITH, C. J. A cinematographical analysis of the action of the lead leg in the flop high jump.
M.S. in Physical Education, 1984, 93 p. (L. Dowell)

The purpose of this study was to analyze and compare 2 styles of lead leg action on the ability to vertically displace the iliac crest in the flop high jump. 1 world class male high jumper executing 2 styles of lead leg action was filmed at 64 fps with 3 16mm motion picture cameras. Linear distances and conversion factors were determined from data obtained from the Vanguard analyzer. Results demonstrated that the actual vertical displacement of the iliac crest was greater than the theoretical vertical displacement of the iliac crest; that the high-knee style of lead leg action exhibited greater velocities of the iliac crest than the low-knee style of lead leg action; and that a positive linear relationship existed between maximum knee flexion of the take-off leg during take-off and the velocity of the iliac crest.

300. VAN OORT, G. The effects of aerobic conditioning on the development of atherosclerotic plaque in miniature swine. Ph.D. in Physical Education, 1983, 144 p. (G. Jessup)

20 miniature swine between 6 and 10 wks old were stratified into 2 groups. One group was fed an atherosclerotic diet and one group was fed a standard commercial pig ration. After 8 wks, S's underwent a max graded exercise test (lGXT) and were subdivided into exercising and sedentary subgroups. The exercise groups (AE and CR) were administered 4 30-min training sessions per wk at 75 to 85% max HR. Following the 8 wk training, S's underwent a second max graded exercise test (PGXT) and then were sacrificed. Density and planimetry measurements were made of the extent of atherosclerotic lesions and compared across groups using a one-way ANOVA. A 2-factor factorial repeated measures design was used to analyze the serum data. Serum values were correlated with plaque deposition. It was found that the ratio of HDL/total cholesterol showed an inverse relationship with the density of the plaque and the % affected area.

301. WHITE, M. J. Career-related motivational characteristics of male nursing students as compared to female nursing students. Ph.D. in Health Education, 1983, 108 p. (H. Tolson)

This study identified a descriptive profile of male and female nursing students in order to determine the motivational factors in their career selection, and compared motivational factors of male and female nursing students. S's (N=614) were junior- and senior-level male and female nursing students at 8 baccalaureate accredited TX nursing programs. S's were asked to complete the WOHC value inventory. Analysis of the data utilizing Roy's Maximum Root Criterion revealed that the vector of M for males and females differed. However, individual comparisons did not contribute to the overall diff in motivational characteristics. Therfore, males and females have similar profiles.

TEXAS WOMAN'S UNIVERSITY (A. Uhlir)
DENTON, TEXAS

302. BATTLE-LEDFORD, S. Therapeutic recreation in private intermediate care facilities for the mentally retarded: A status assessment. M.A. in Therapeutic Recreation, 1985, 104 p. (J. Tague)

This study determined the status of therapeutic recreation in private level V intermediate care facilities for the mentally retarded in TX. A questionnaire was mailed to the recreation directors employed by the existing level V intermediate care facilities. A 76.19% return rate was achieved. The typical director who responded to the questionnaire was female (81.25%), 20-29 yrs of age (63%), and held a bachelor's degree (56.25%). The typical resondent worked in a community with a population between 10,000 and 50,000 people (57.5%), had been employed in the therapeutic recreation field between 1 and 5 yrs (43.75%), earned an annual income between $10,000 and $14,999 (50%), and was not a member of a professional recreation organization. The majority (93.75%) of the programs investigated were administered under the DEPT heading of "Recreation." These programs had written philosophy and goal statements (62.5%), coordinated programs regularly with other DEPTS (100%), and utilized the following 2 assessment procedures: interview (87.5%) and observation (81.25%). The typical client residing in the facilities investigated spent from 50% to 100% of their programming day participating in recreation activities that were diversional in scope, with television cited most often (93.75%) for participation. The results of the study indicated that the status of therapeutic recreation in the private intermediate care facilities for the mentally retarded in TX closely parallels the status of recreation programs studied prior to 1945 as evidenced by research produced during that period and that these programs are diversional, not therapeutic, in scope.

303. BUCKMAN, S. D. Dance in Denver's Pioneer Theatres: 1859-1871. Ph.D. in Dance and Related Arts, 1984, 194 p.

The role of dance on the frontier society of Denver, CO, 1859-1871, was investigated by searching primary and secondary sources in order to identify who danced, what they danced, the nature of the theatres they danced in, and the audiences who watched. Performances that took place in legitimate and variety theatres were studied. Recreational forms of dance were not investigated. Several persons were identified as having performed dance and performed in intr'acte and major dance productions. The theatres were found to be crudely built and there were many problems with performances given in the winter months. The early audiences were rowdy, but controlled in later years by a police system. Several trends were identified. Although dance historians have paid little attention to dance that was performed in the frontier societies of the US, dance was being performed. Dance assumed a sig role in the frontier society of Denver, CO.

304. COOPER, M. Attitudes toward physical activity and sources of attraction to sports of cerebral palsied athletes. Ph.D. in Physical Education, 172 p. (C. Sherrill)

Attitudes toward physical activity and sources of attraction to sports were examined in relation to sports classification (nonambulatory vs. ambulatory) and gender for cerebral palsied athletes. Ss were 170 CP adult athletes who competed in the 1983 National CP Games, Ft. Worth, TX. Data were collected by interview on Simon and Smoll Attitude Toward Physical Activity Scale (SATPA) and Lowry's Sport Attraction Instrument (SAI). SATPA was treated with MANOVA, 1-factor repeated measures, and Scheffe's method of a posteriori test; SAI was treated with Spearman rank r and Friedman 2-way ANOVA of ranks. No sig diff was found among classes, sexes, and class by sex combinations in attitude toward physical activity. Subscales were in the "pretty good" attitude range, but physical activity as thrill and as long and hard training were rated sig lower than other subscales, F(5, 820) = 35.09, P<.001. Of 11 sources of attraction, challenge of competition was ranked most important for all groups, and fun and enjoyment was second except for nonambulatory Ss who indicated love of the sport as second most important.

305. EVANS, D. Reliability and objectivity of the volumetric technique for determining body density.
M.S. in Physical Education, 1984, 58 p. (J. Rosentswieg)

This investigation accumulated and assessed comparative data regarding the volumetric technique for determining body density of the female. The 40 volunteer athletes who served as Ss were aged 18 to 26. Data were collected at the Texas Woman's University in Denton, TX using a Whitmore volumeter. Body density was determined according to the method of Behnke and Whitmore. 40 of the Ss performed 10 trials to determine the minimum no. of trials needed to obtain stability of the technique. 20 of the Ss' measurements were read independently for the purpose of determining the objectivity of the procedure. 20 of the Ss were retested over 3 wks to determine reliability over an extended period of time. The raw data revealed: (a) no sig diff between any of 10 trials indicating that the volumetric technique requires only a minimum no. of trials for stability, (b) 2 observers had a correlation of r = .97 indicating a high objectivity, and (c) a retest correlation of r = .82 indicated reliability over an extended period of time. It may be concluded that the volumetric technique is a simple, reliable, and objective procedure.

306. HARSELL, C. K. Development of a book on Kinderdance. M.A. in Physical Education, 1984, 92 p.

A book was prepared for parents and teachers involved in early childhood education on the need for and educational value of a dance and motor development program designed for boys and girls 3 to 5 yrs of age. Need for such a program was established through interviews with 45 kindergarten teachers and school officials, an informal survey of private and public school system standards for testing children entering kindergarten, and a review of research and literature. Information obtained showed that an increasing no. of youngsters were attending preschools, and that there was need for a program to prepare children for entrance into a formal academic environment. The Kinderdance program was designed to focus on perceptual-motor, cognitive, and affective domains principally through the medium of dance and fundamental movement activities. Included in the book is instruction in basics of ballet, tap, acrobatics, and modern dance, which are integrated with learning of vocabulary, numbers, colors, and shapes.

307. HOUSE, M. B. R. Undersong: A dance based upon one source of kinetic rhythm, the breath. M.A. in Dance and Related Arts, 1984, 98 p. (A. Fisk)

The breath's energy was explored as an impetus for creating a nonliteral dance. Everyday/familiar breath rhythms were selected in order to develop the visual and kinetic images that were used as thematic material for the dance. The thematic concern was with the kinesthetic sensation of the simple breath impulse. The kinetic impulses were drawn from the breath rhythm in it's normal pattern as well as the reshaping and timing of the rhythm inherent in everyday breath patterns. Experience was gained from the production and thesis in developing nonliteral choreography and explaining it in written terms. Utilizing the breath's energy as the sole impetus for movement was imperative in order for the dancers to realize the choreographic images and movement content. An inadequately developed climax occurred due to the choreographic organization of the movement themes. Results supported the prediction that the breath is 1 source of kinetic rhythm and transfering the breath rhythm into movement is natural and full of dynamic possibilities. The feelings, images, and relationships resulting from the process of breathing and its rhythms are endless.

308. KAHLER-VALLI, T. Body image of young hearing impaired and nondisabled children. M.S. in Physical Education, 1984, 140 p. (C. Sherrill)

This investigation studies the diff between young children, ages 4 to 6 yrs, on body image and the diff a hearing impairment may have on that concept. 23 pairs of Ss matched on age and sex were administered the Goodenough-Harris Drawing Test (Harris, 1963). The pairs of students consisted of 23 nondisabled children who were matched to 23 hearing impaired children tested by Bronstein (1983) 1 yr earlier. Raw scores were organized and an ANCOVA with repeated measures design model was used. Results showed that there was no sig diff between the hearing impaired and nondisabled preschool children on scores obtained on the Goodenough-Harris Drawing Test.

309. MARTINEX-HUNTER, S. The development of dance in Mexico: 1325-1910. Ph.D. in Dance and Related Arts, 1984, 227 p. (A. Lockhart)

In this study of the development of dance in Mexico from the Pre-Hispanic period to the Mexican Revolution of 1910, the focus was to synthesize a record of the development of dance with corresponding historical events during this period of time. In the literature about dance in Mexico little reference is customarily made to the historical events from which the dance themes originated. It was, therefore, the intention of this study to provide a basis for understanding the dance of Mexico from an historical point of view, as it was from historical events that much of today's dance emanated, the people expressing and interpreting their responses to events via dance. The investigator endeavored to illustrate how dance mirrored the gestalt of the people and their reactions to events which greatly affected their lives. The investigator found references that linked Mexican history and folklore, but not Mexican history and dance. As a result of this study, however, it was concluded that Mexico's history is reflected in its folklore which is uniquely expressed via its dance origins, styles, and rhythms. The link between history and folklore is expressed in the dance, and dance is the link to cultural heritage.

310. MONTELIONE, T. Computer assisted instruction in behavior management for the physical education setting. Ph.D. in Physical Education, 1984, 201 p. (C. Sherrill)

This study compared the effectiveness of 2 instructional methods (CAI and lecture) in increasing knowledge of behavior management (BM) by undergraduate students enrolled in PE major courses. The Ss were 40 students at SWYSU, San Marcos, TX. The control, lecture and CAI groups had 10, 14, and 16 Ss, repectively. All Ss were pre and posttested using a 40-question, multiple choice test, the Montelione Behavior Management Test (MBMT). The MBMT had a test-retest r of .87 and an alpha coefficient of .76. 1 exp group received instruction in BM through lecture presentations whereas the other received it through CAI. The control group received no instruction. The dependent variable was the posttest score on the MBMT. The exp groups received 4 hrs of instruction over a 2-wk period. A one-way ANCOVA was used to analyse the data. Sig diff weere found among all 3 groups (F(2,36) = 15.57, p<.01). A Scheffe post hoc revealed the CAI group to be superior to both the lecture and control groups, and the lecture group to be superior to the control group. It was concluded that CAI was more effective than the traditional lecture method of instruction.

311. OAKLEY, T. Evaluation of direct service delivery and teacher training in physical education for the handicapped students in Arkansas. Ph.D. in Physical Education, 1984, 331 p. (C. Sherrill)

The investigator utilized the Countenance Model (Stake, 1967) to guide a statewide adapted PE (APE) evaluation study. The National Consortium on PE and REC for the Handicapped (NCPERH), State Needs Assessment (Chasey, 1979), the Survey of APE Needs (SAPEEN) (Sherrill & Megginson, 1984), and the APE Teacher Training Survey (APETTS) developed by the investigator were utilized to survey SEA personnel in special education and PE (N = 8), LEA special education supervisors (N = 61), and PE DEPT chairpersons from colleges/universities (N = 16), respectively. Items from each instrument were rated on 2 scales relating respectively to the extent to which each APE condition now exists and should exist. Kendall rank r coefficients were computed for each item within the 3 instruments to determine if there was congruence between existing conditions and desired conditions. X^2 goodness-of-fit tests were computed for each item within the 3 instruments to determine the frequency of responses of each rating of existing conditions. Results from each instrument revealed that existing conditions in APE in AR are not congruent with desired conditions. Additionally, SEA and college/university Ss agreed in their rating of existing conditions in APE in AR; LEA Ss disagreed in their ratings.

312. ROBINSON, C. J. A comparison of the acceptance of disability of wheelchair athletes and wheelchair

nonathletes. M.A. in Therapeutic Recreation, 1985, 94 p. (J. Tague)

Ss were 2 groups of 35 men and women with physical disabilities matched according to sex, age, type of disability, length of time since onset of disability, employment status, and level of lesion of spinal cord injured individuals. 1 group participated in the 1982 National Wheelchair Games in Marshall, MN, while the other was made up of persons with physical disabilities who were former patients of The Institute for Rehabilitation and Research in Houston, TX. This study utilized a nonrandomly selected 2 group design. Acceptance of disability was measured by the Acceptance of Disability (Linkowski, 1971) scale. Of a possible 300 score, the athletic group had a M score of 263.06 while the nonathletic group had a M score of 140.43. The diff between these scores was sig at the $P<.001$ level. The diff in the scores and the statistical diff show that the athletic group had a better acceptance of disability than the nonathletic group. These findings indicate that participation in athletics by individuals with physical disabilities may influence acceptance of disability.

313. ROMER, K. Corporate health promotion and the post-industrial society: a futures study in health forecasting. Ph.D. in Health Education, 183 p. (D. Merki)

This study explored, through the means of social forecasting, alternative futures for the delivery of health promotion services in the corporate setting. 3 alternative forecasts were developed from a 3 stage research design: (a) historical review, (b) statistical treatment, and (c) scenario narration. Data from the occupational, technological, and economic systems during the 1956 to 1980 time period served as the basis for the historical review. A 43 item event questionnaire was developed from the social indicators revealed in the historical review and an initial probablity for each event was judged by a group of 17 experts. The M score derived from each of these 17 judgments served as the 1 initial probability for each event. The conditional probabilities for each event pair were then calculated and the limits were placed in a cross-impact matrix. After taking the varying combinations of events revealed by the cross-impact matrix, the following 3 corporate health promotion alternative futures for the corporate health promotion specialist were intuitively developed: (a) a benchmark or surprise free scenario, (b) a "best of all possible worlds" scenario, and (c) a "worst of all possible worlds" scenario.

314. ROSE, D. An analysis of stroke frequency, stroke length, and performance of male college-aged competitive swimmers. M.A. in Physical Education, 1984, 110 p. (P. McGrain)

This study examined diff in stroking patterns of 90 male collegiate swimmers from Southwestern Conference, NCAA, Division I swimming teams. All swimmers were videotaped during competition at the Southern Methodist University Perkins Natatorium, Dallas, TX in November and December, 1983. The videotape data was time-coded by using a SMPTE time code reader/writer. Split times and the no. of arm recoveries/25-yds were recorded for each swimmer in selected events. The events analyzed included 100-, and 200-yd butterfly, backstroke, breaststroke, and freestyle, and the 500-yd freestyle. Stroke frequency (SF) and stroke length (SL) were analyzed across split intervals and among distances for each competitive swimming stroke. An ANOVA with repeated measures across split intervals was used to determine if sig diff were present across distances and split intervals. The results of this investigation support the fact that average SL decreases for all selected events over the course of the race. Also, as the average SL decreases the average SF may increase of remain unchanged during the course of the race.

315. SANCHEZ, B. D. The interrelationships of leisure satisfaction, job satisfaction, and life satisfaction among therapeutic recreation specialists. Ph.D. in Therapeutic Recreation, 1984, 118 p. (J. R. Tague)

The study was conducted to determine if a relationship existed among leisure satisfaction, job satisfaction, and life satisfaction of therapeutic recreation specialists. A secondary objective was to ascertain if the demographic variables of age, sex, education, income level, health, religion, tenure, marital status, race, population size of city/town, type of facility where employed, client classification, and participation in therapeutic recreation organizations accounted for the variance in life satisfaction, leisure satisfaction, and job satisfaction of the specialists. 262 specialists participated in the study. The typical specialist who responded to the questionnaire was female (76%), 25-34 yrs of age (62.2%), married (52.1%), held a bachelor's degree (65.6%), and reportedly were in excellent health (64.9%). They were of the Catholic faith (26%) or Protestant (22.3%), and had been employed as a specialist 8 yrs or less (42.9%). The individual earned an annual income of between $15,001 and $25,000 (54.2%), and lived in a community whose population ranged between 100,000 and 500,000 citizens (24.8%). The specialist was employed in a psychiatric hospital (30.2% of the total subject group). Pearson Product Moment Correlation coefficient and multiple regression analysis were employed to test the interrelationships of the satisfactions and the demographic variables. The results of the study indicated sig correlations between leisure satisfaction and life satisfaction, but no correlation between leisure satisfaction and job satisfaction. Health, working with spinal cord injured clients and the well-aged sig accounted for the variance in leisure satisfaction. Working with autistic clients and being a member of the National Therapeutic Recreation Society accounted for lower job satisfaction scores. Being active in one's religious affiliation, being married, and in excellent health accounted for the variance in life satisfaction.

316. THETFORD, J. L. The effects of jogging and simulated cross-country skiing as modes for improving max O2 uptake and body composition in college-aged males. Ph.D. in Physical Education, 1984, 90 p. (B. E. Gench)

This study determined the effectiveness of 2 training modes relative to max O2 uptake and body composition. The 2 modes were jogging and use of the NordicTrack, a cardiovascular (CV) exercise device which simulates cross-country skiing. 24 volunteer male Ss, 18-22 yrs of age, from Tarrant County Junior College-N.E. Campus participated in the 12 wk training program of jogging or skiing. 12 were randomly assigned to each group and trained 20 min, 3 days/wk, at an intensity of 60-85% of max HR range. 8 male volunteers comprised the control gorup; they were from PE classes not involved in CV training. The Ss were pre- and posttested on the 2 dependent variables: max VO2 was determined by a max treadmill stress test using the Bruce protocol, and body composition was assessed by underwater weighing in which body fat was estimated by the Brozek et al. formula. The data were treated statistically with a multivariate ANCOVA. A Scheffe post hoc analysis was applied to the adjusted posttest means when appropriate. The results showed no sig CV changes between jogging and training on the NordicTrack; however, sig changes did occur in body composition. Results indicated that when frequency, intensity, and duration of aerobic activities are similar, the training results appear to be independent of the mode of activity.

317. THOMAS, E. R. The effect of a nutrition education module specifically for the elderly: an experimental study. Ph.D. in Health Education, 1984, 172 p. (D. Merki)

A nutritional education program for the elderly was developed and conducted to determine effectiveness on nutrition knowledge, and planning and preparation of nutritious meals. 60 voluntary participants that were 60 yrs of age or older (both males and females representing 3 ethnic groups - Black, White, Mexican-American), were divided equally into an exp and control group. The exp group received extensive organized nutrition education while the control group was isolated from nutrition education. Data were collected in February, 1983 at Happy Haven Nutrition Center in Dallas, TX by use of the Ross-Thomas Nutrition Knowledge Test, a Meal Planning Skills Questionnaire and a Meal Planning-Preparation Experience. Both pre-post test and post-test-only designs were utilized. Data were treated statistically by means of the dependent and independent samples t-tests, the Pearson Product-Moment Correlation and the Fisher's Z-transformation. During the post-test phase, the exp group had sig higher scores on the instrument than the control group. This outcome can probably be attributed to the organized nutrition education received by the exp group. Such findings suggest a direct relationship between nutrition education and nutrition knowledge, meal planning and meal preparation.

318. VAN DYKE, J. Heart rate response and oxygen uptake during exercise in sighted, blindfolded, and visually impaired subjects. M.A. in Physical Education, 1984, 42 p. (J. Rosentswieg)

The lack of visual cues was studied on selected physiological measures during exercise. 20 Ss (15 sighted, 5 visually impaired (VI)) were administered a Balke treadmill test that was terminated when the S reached a HR of 150 BPM. The 15 sighted Ss performed the test twice: once sighted and once blindfolded. HR was monitored continuously during the test by a V5 lead EKG. Oxygen uptake was determined at a HR of 150 bpm. Hotelling's T^2 test was used to analyze the data. No sig diff (p<.05) were noted between the VI and the sighted but blindfolded groups in HR at 1 min, HR at 2 min, VO2 at HR 150 bpm and time (min) to HR of 150 bpm. The sighted and sighted but blindfolded comparison showed a sig diff ($p<.05$) between the conditions in HR at 2 min. Results revealed that there was no sig diff in HR response to submaximal exercise between VI and sighted but blindfolded subjects and indicate that VI individuals do not experience more stress in walking tasks than do sighted individuals.

319. WHIDDEN, M. Socialization into sport of cerebral palsied persons. M.A. in Physical Education, 1984, 83 p. (J. Pyfer)

This investigation studied the socialization factors influential in the sport participation of 50 cerebral palsied persons. The Ss ranged in age from 8 to 50 yrs and were competing in the Fort Worth Regional Games in the spring of 1983. The athletes were administered a fixed-alternative, oral or written questionnaire originally developed by Greendorfer & Lewko (1978). The dependent variables were values toward sport, family, peers, teachers, and opportunity set. The data were analyzed using a step-wise regression. A sig correlation existed between active sport involvement and values toward sport ($R=.51$, $p<.05$) and between active sport involvement and family ($R=.33$, $p<.05$). The single variable, values toward sport ($R^2=.25$, $p<.05$), was found to sig predict the active sport involvement of cerebral palsied persons.

THE UNIVERSITY OF ALABAMA (J. F. Smith)
UNIVERSITY, ALABAMA

320. VIRGETS, T. C. Relationship of weight loss to selected physiological, strength, and motor performance measures of college boxers. Ed.D. in Health, Physical Education, and Recreation, 1985, 91 p. (J. F. Smith)

19 male collegiate boxers (18 to 21 yrs) from the VA Military Institute participated in this study. Assessment of wt loss, % body fat, handgrip strength, systolic BP, diastolic BP, RT, MT, punch force, bicycle arm fatigue, fatigue RT, fatigue MT, and fatigue punch force was carried out 3 times at intervals of 0 wt loss, wt loss after 2 wks, and wt loss after 4 wks. Wt reduction was accomplished through exercise, reduction of caloric intake, and dehydration. Multiple regression procedures were employed to determine if relationships existed between the predictor variable (wt loss) and the criterion variables over the 1st and 2nd trials, and the 1st and 3rd trials. F tests were calculated to determine if statistically sig relationships existed ($p<.05$). Results showed wt losses averaging 4.7% between the 1st and 2nd trials and 8.2% between trials 1 and 3 had no sig effect on the criterion variables. Results suggest that a boxer can reduce up to 8.2% of his body wt over a 4 wk period without incurring any detrimental effects on physiological, strength, and motor performance measures that relate to boxing performance.

321. PITTS, B. G. The effects of a smaller, lighter basketball on skill performance of female basketball players. Ed.D. in Physical Education, 1985, 84 p. (J. F. Smith)

The purposes of this study were to: (1) compare basketball skill test performance in females when using a regular basketball and a smaller, lighter basketball; and, (2) investigate the relationships between selected anthropometric and upper body strength measurements and skill test performances. Ss were 69 female SHS and college varsity basketball team members (age M = 18.1 yrs). Skill performance was measured by an 8-item skill test from AAHPER Basketball Skill Test Manual for Girls (1966). Anthropometric and upper body strength measurements taken were age, ht, wt, arm span, hand size, grip strength, and push-ups (modified). Data were analyzed using correlated samples t-tests and stepwise multiple regression analysis.

Results showed that all Ss performed sig better with the smaller basketball on all 8 skill test items ($p<.01$). The primary anthropometric factors sig affecting performance with both basketballs were wt, handsize, arm span, grip strength, and push-ups. Results demonstrated that those Ss who were heavier, had larger hands, longer arms, and greater upper body strength, performed better with both basketballs, but performed sig better with the smaller basketball. An attitude questionnaire revealed that the players and coaches felt the smaller ball had a positive effect of skill performance. 85% felt the smaller ball would improve performance at the college level while 90% felt it would improve performance at the SHS and JHS levels.

UNIVERSITY OF ARKANSAS (G. Moore)
FAYETTEVILLE, ARKANSAS

322. HAMELINK, R. L. Self-record keeping as a behavioral component within a comrehensive fat loss program. Ed.D. in Health, Physical Education and Recreation, 1984, 119 p. (R. Guyton)

Ss who used a self-help record keeping manual in a comprehensive wt/fat control program were compared on loss of wt and fat with a control group who did not participate in a self-record keeping program. The specific items evaluated were wt loss, fat loss, changes in self-concept, changes in values, and drop out rate. Ss were student volunteers at a student health center randomly assigned to 1 of 2 groups. The 6 wk program was completed by 14 of 22 Ss in the exp group and by 13 of 15 in the control group. Tests used included the Skyndex computerized fat caliper, TN Self Concept Scale, and the Rokeach Value Survey. Results showed the exp group lost sig more wt (6.1 to 3.3 lbs, $t=1.596$), lost sig more fat (-3.0% to -1.4%, $t=2.039$) but were not sig diff in changes on self concept from the control group ($t=1.596$) or on drop out rate ($X^2=2.399$). On changes in values the exp group showed sig changes over control group on 5 of 35 instrumental values: a comfortable life, a sense of accomplishment, a world of beauty, self respect, and social recognition.

323. LYNCH, D. Muscular power, reaction time, and visual perception as related to striking abilities of second grade children. Ed.D. in Health, Physical Education and Recreation, 1984, 68 p. (G. Moore)

Second grade children were compared on a stationary striking task and a moving striking task as to diff in performances on various physical and perceptual variables. In addition, performances of males and females were compared and the prediction of striking ability investigated. Ss were 90 male and female second grade students. Information used included: standing ht, umbilicus ht, wt, age, sex, dominance, ocular control, eye-motor coordination, position in space, RT, muscular power of the legs, stationary striking ability, and moving striking ability. Statistics used were t, r, and stepwise multiple r. Conclusions were: performance on a stationary task exceeds performance on moving tasks; ele school boys have increased muscular power, faster RT, can hit the ball harder, and need fewer attempts to attain 7 good hits than do girls. For both boys and girls, standing long jump, ht, and side dominance are important predictors of stationary striking ability.

324. PICKETT, B. A. A comparative study to determine the effects of two instructional methods in teaching a back somersault. Ed.D. in Health, Physical Education and Recreation, 1984, 68 p. (R. Ryan)

The effects and rate of learning were compared between the pit method and the assistive spotting method of teaching the standing back somersault in a tuck position. Ss were girls ages 7 through 18 divided into pit method (N=10) and assistive spotting method (N=11) groups. Both groups received verbal instruction from the same teacher daily for the 10 days of the class; viewed a film of the ideal standing back somersault tuck position; and viewed their own video taped test (5 times). All Ss completed 30 practice standing back somersaults each day. Approximately every other day the first 5 practice jumps were videotaped using the method they had practiced (pit or assistive spotting). The final videotape had all Ss perform the 5 somersaults with a light assistive spotting. The video tapes were evaluated by 4 certified gymnastic judges who scored the Ss on amplitude, technique, posture, direction, and virtuosity. A total score was also computed. t's were used to analyze the data between and within each group at each of the taping sessions. Conclusions were: no sig diff existed between the 2 methods at any point of the study; both groups improved sig from pre to post scores; and learning rates were roughly the same with rapid learning at the beginning, a leveling off, and then a rapid learning at the end.

325. SCOTT, G. J. Trihalomethanes in the public drinking water of Missouri, Kansas, Oklahoma, Arkansas, and Texas. M.Ed. in Health Education, 1984, 65 p. (R. Guyton)

A survey instrument was devised with which to collect data reflecting the degree to which trihalomethanes (THMs) were manifest in the public drinking water supplies of cities having populations of 75,000 or more consumers within the states of MO, KS, OK, AK, and TX. The survey instrument ascertained the no. of THMs present; where monitoring was being conducted; which supplies exceeded the max containment level; if THM monitoring results are accessible to the public; where and how and individual can obtain these results; if THM levels are higher in locations served by a surface water source; and if a relationship could be made between the amount of chlorine required for disinfection and the amount of THMs detected. A secondary purpose sought to determine the measures available to the consumer interested in lowering exposure to THMs. Results included: THM monitoring was being conducted in all 5 states; of the 38 cities surveyed, 8 reported THM concentrations in excess of 100ppb; total THM levels were higher in areas supplied by surface water sources; and the most effective home water filter devices studied were Everpure, Model QC4-THM and the Continental Filter, Model CB-2.

326. STOBART, W. L. A scale to measure attitudes toward organized college intramural sports programs. Ed.D. in Health, Physical Education and Recreation, 1984, 108 p. (R. Ryan)

A preliminary list of 106 attitudinal statements was given to a 20 member panel of judges to determine which statements were positive, negative, or unclear. After an analysis of the judges' conclusions, a list of 74 statements was given to a pilot group (N=57). From the responses the following were determined: a discriminatory factor for each statement; the 30 positive and 30 negative statements with the greatest discriminatory factors; and the item reliability of each statement. These 60 items were divided equally into forms A and B of 30 statements each. A Spearman's r of .84 was computed when scores from Form A were compared to scores on Form B using 300 randomly selected college students.

327. WHITE, G. T. College football, division IA, offense 1973-82: effects of hands-on blocking. Ed.D. in Health, Physical Education and Recreation, 1984, 117 p. (G. Moore)

Offensive statistical information was obtained on all 92 schools of division IA college football for the 10 yrs 1973 through 1982. From this a % of each variable (Passing or running plays and yardage) was generated. A survey instrument was developed regarding hands-on blocking which was mailed to all 92 head coaches. 74 responses were received (80%). ANOVA was used to analyze the diff between the variables from one yr to another. Results indicated that the no. and percentage of running plays and the amount of running yardage decreased from 1973 through 1982 with a corresponding increase in the no. and percentage of passing plays and the amount of passing yardage. The coaches of college football favored hands-on blocking and believed hands-on blocking contributed to the change toward more passing.

328. YOUNT, K. J. A comparative study of hamstring strength gains between the Roark Exerciser and hamstring curls. M.Ed. in Physical Education, 1984, 40 p. (M. Daniel)

Strength gains in the hamstrings using the Roark Exerciser were compared to curls using a Universal-hamstring curl machine. Ss were 23 volunteer females 18-22 yrs of age divided into a Roark Exerciser group (N=8), a Universal-hamstring curl group (N=5) and a control group (N=10). Pre and post test scores were obtained for wt, hip and thigh measurements, sit and reach, standing long jump, and hamstring strength for the right and left legs. ANOVA was used to analyze the diff between the 3 groups. Findings indicated that the Universal-hamstring curl program yielded sig strength gains in the right hamstring compared to the other 2 groups. It was concluded that the Roark Exerciser is not a valid apparatus for developing the hamstring muscle group.

UNIVERSITY OF BRITISH COLUMBIA (G. D. Sinclair)
VANCOUVER, B.C., CANADA

329. CANIC, M. J. An Eastern approach to motor skill acquisition and performance. M.P.E., 1983, 81 p. (R. Sparks)

330. CARTON, R. L. The effects of endurance training upon rating of perceived exertion. M.P.E., 1983, 110 p. (E. C. Rhodes)

331. DEWAR, A. M. The subjective warrant and recruitment into physical education. M.P.E., 1983, 97 p. (H. Lawson)

332. FERNYHOUGH, J. L. Structural characteristics of female distance. M.P.E., 1983, 97 p. (S. R. Brown)

333. MARTINDALE, W. O. Mechanical energy variations in rowing. M.P.E., 1983, 65 p. (G. Robertson/K. Coutts)

334. MAVROGIANNIS, A. Variations in the ventilatory and lactate thresholds with prolonged aerobic exercise. M.P.E., 1985, 79 p. (D. C. McKenzie)

335. MCCREADY, M. L. Locus of control and adherence to exercise programs. M.P.E., 1984, 81 p. (B. C. Long)

336. MITCHELL, M. F. Recruitment into the role of professor of teacher education in physical education. M.P.E., 1984, 99 p. (H. Lawson)

337. WALSH, M. L. Serotonin and exercise. M.P.E., 1983, 70 p. (K. Coutts)

338. WEICKER, D. L. The kinematics, movement phasing and timing of a field hockey drive in response to varying conditions of uncertainty. M.P.E., 1983,, 156 p. (I. Franks)

UNIVERSITY OF CALIFORNIA, BERKLEY
BERKLEY, CALIFORNIA

339. ADACHI, T.-J. Role strain and coping strategies among intercollegiate baseball and softball non-starters. M.A. in Physical Education, 1982, 280 p. (B. J. Bredemeier)

Role strain, the felt difficulty in fulfilling role obligations, may involve feelings of conflict, inadequacy, guilt and frustration within the athlete. Within the social system it may be associated with interpersonal conflict and failure to achieve team goals. Thus role strain among non-starters has important consequences for the athlete as well as for the team. The extent of experienced role strain is mediated by coping strategies utilized by non-starters. The Non-Starting Role Inventory was constructed based on information collected from 2 pilot studies (in-depth interviews with coaches and non-starters' responses to an 11-page questionnaire). The inventory with specified instructions for test administration was mailed to NCAA and AIAW coaches. Item analyses and correlational procedures were utilized to interpret the responses of 113 non-starters. Specific sources of role strain among intercollegiate baseball and softball non-starters were identified. Relationships among selected demographic variables, sources of role strain, and types of coping strategies were discussed. This information may facilitate the efforts of athletes, coaches and sport psychologists to develop strategies for role strain reduction among non-starters.

340. CLARK-STANLEY, W. C. Ventilation studied with circulatory occlusion during exercise and exercise recovery. M.A. in Physical Education, 1983, 95 p. (G. A. Brooks)

The purpose of this study was to determine the effects of circulatory occlusion and its release on respiratory gas exchange and ventilation during exercise and exercise recovery. Respiratory gas exchange was measured breath-by-breath; occlusion was effected by thigh cuffs inflated to 200 mmHg. For the first exp 8 male Ss exercised on a cycle ergometer at 300 and 600 kgm/min for 12 min. Circulation of the legs was occluded for 2 min after 6 min of unocculuded exercise. M 15 sec values were statistically compared to the preocclusion baseline. In the second exp 7 male Ss exercise at 600 kgm/min for 6 min; circulation to the legs was occluded for the last 15 sec of recovery. The results were compared to control studies without occlusion. It was found that neural ventilatory drive increased during occlusion and that the lag time between the PETCO2 and VE inflections suggests the CO2 ventilatory drive is mediated by the carotid bodies and the medulary chemoreceptors. No evidence for a pulmonary CO2 receptor was found.

341. DONOVAN, C. M. Tracer kinetic studies of glucose and lactate metabolism in trained and untrained animals. Ph.D. in Education, 1981, 108 p. (G. A. Brooks)

342. FUKUSHIMA, S. Bushido in tokugawa Japan: A reassessment of the warrior ethos. Ph.D. in Education, 1984, 288 p. (R. J. Park)

During the first half of the Tokugawa period (1600-1750), Bushido (the ethos of the professional warrior class exhibited a close association with dominant cultural values. It was manifested in the warriors' attempt to redefine their collective identity. The traditional bases of the Bushi (warrior) class, which were concerned with a martial way of life, became unsuitable under the newly established political objectives of peace and tranquility. A substantially nomolithic unity formed the basis of Tokugawa society and culture. Bushido was one of the major reflections of this unifying force. The features of Bushido, however, did not remain static. Certain fundamental elements persisted: ie, the Japanese household system, and honne/tatemae, the Japanese dual concept of the self in social interaction. Busutsu (martial arts), once the special discipline of the Bushi class, was continuously employed as a means to cultivate warrior ideals: it refined the warrior's daily behavior, and thus his identity. With a society undergoing crises, the previously established social order begins to break down. At such times, efforts which are made to reestablish order may place considerable emphasis on monolithic unifying structures and forces. *Bushido* actied as such a force in Tokugawa Japan.

343. HENDERSON, S. A. *Leucine turnover and oxidation in trained and untrained rats during rest and exercise.* Ph.D. in Education, 1983, 110 p. (G. A. Brooks)

344. KIRKWOOD, S. P. *Effects of endurance training on a mitochondrial reticulum in skeletal muscle.* Ph.D. in Physical Education, 1984, 91 p. (G. A. Brooks)

345. MCQUILLAN, J. P. *Factors governing changes in the motor performance of the trainable mentally retarded.* Ph.D. in Education, 1982, 112 p. (G. L. Rarick)

This study investigated the degree of association between selected variables related to the rearing and development of 203 EMR children and young adults, and changes in motor performance following 30 mo of individualized daily instruction in PE. A control group received instruction in art, craft, and music. The independent measures were mental ability, body fatness, school attendance, sex, rearing, CA, and type of disability. The criterion measures were the change scores on 6 tests of motor performance, each measuring an independent dimension to the EMR domain. The investigation sought to determine the differential effect of the independent variables on the motor performance of the Ss in the 2 respective groups and the effectiveness of the 7 independent variables in separating the EMRs in terms of their performances on each of the 6 criterion measures. The principal finding indicated that on only 1 criterion measure, the grip strength, were the treatment groups sig dissimilar. For the control group the common variance between grip strength and attendance amounted to 20%, and for the PE group the common variance between the same 2 variables was sig stronger, amounting to 40%. In each group the Ss with the better attendance achieved the greater gains in strength, There was a tendency for leaner and lesser retarded individuals to make better gains on 3 of the 6 criterion measures. The remaining independent variables made little or no impact on any of the 6 measures.

UNIVERSITY OF COLORADO (D. Mood)
BOULDER, COLORADO

346. NAPPER, G. E. Hydrostatic weighing at two different lung volumes with children. M.S. in Physical Education, 1984, 73 p. (E. W. Vogler)

30 female swimmers (8-12 yrs) were hydrostatically weighed at RV and TLC in order to evaluate the reliability of HW at RV and HW at TLC and to establish a correlation between the body densities determined by the 2 methods. Ss were tested on 3 separate days. Vital capacity and RV (O2 dilution) were measured out of the water. Underwater wt at RV was assessed as the M of the last 3 of 8 to 10 trials. Underwater wt at TLC was assessed as the M of the last 2 of 3 to 6 trials. No sig diff were found in body densities usiing RV ($p>.05$). A high reliability coefficient ($r=.94$) was found for the 3 body density M at RV. No sig diff were found in body densities at TLC ($p>.05$), and a high reliability coefficient ($r=.88$) was found. A high correlation ($r=.92$) was found between the corresponding densities at RV and TLC. The results demonstrate that HW at RV and HW at TLC are reliable methods for determining the body density of 8 to 12 yr old female swimmers. The high correlation between the 2 methods indicates that TLC may be the preferred lung volume with a non-swimming population.

UNIVERSITY OF GEORGIA
ATHENS, GEORGIA

347. ENNIS, C. D. Purpose concepts in physical education curriculum development. Ph.D. in Curriculum Theory, 1984, 235 p. (A. E. Jewett)

The investigation identified the presence of purpose concepts in an existing PE curriculum and the effect of a formal introduction of purpose concepts on their increased use. Movement purposes identified in the Purpose-Process Curriculum Framework (Jewett & Mullan, 1977) were described in an existing PE curriculum using the Goodlad, Klein, and Tye (1979) domain concept. 6 teachers and 405, 6-8th graders were observed for 13 wks. Purposes were examined in the formal, percieved, experiential, and operational domains. Data collection included ethnographic field notes, student and teacher interviews, content analysis of the curriculum guide, 4 forms of the MS Movement Purposes Inventory and the Ennis Revision of the Toulmin ELE PE Attitude Scale. Data analyses of field notes included constant comparison, typological, and analytic induction strategies. Descriptive statistics and 4-way ANOVA procedures were computed for the inventories and the attitude scale. Results of the analyses were triangulated. 9 purposes were identified in 4 domains. 5 purposes were present in 3 domains. 7 purposes were present in 2 domains. 1 purpose was not found in the program. It was concluded that an existing PE curriculum could be described through an analysis of purpose concepts.

348. FOX, E. C. Team cohesion, ability and coaches' leadership effectiveness as predictors of team success in women's intercollegiate softball. Ed.D. in Physical Education, 1984, 98 p. (T. A. Baumgartner)

Prediction of softball team success on the basis of playing ability and sociometric factors was sought. Ss were intercollegiate women's softball teams participating in the 1984 season (n=94). The Martens and Peterson Sprots Cohesivenss Questionnaire, the Fringer Softball Fielding Grounders Test, and the Fiedler Least Preferred Co-Worker scale yielded scores for the predictors. The success measure was win/loss record. Pre-season cohesion, ability and leadership effectiveness did not account for a sig amount of the variance in success. Pre-season cohesion, leadership effectiveness and success did not sig predict post-season cohesion. There was no relationship between either pre-season or post-season cohesion and success. There was no sig interaction effect between leadership style and cohesion in accounting for success, and no relationship between leadership effectiveness and success. Task-oriented coaches were sig more successful than relations-oriented coaches. There was a sig relationship between pre-season and post-season cohesion, and the M for both measures were similar. It was concluded that softball may have more properties of a coaching team than an interacting team; that coaches wil be more successful if they are task-oriented; and, that cohesion may be measured at either the beginning or at the end of the season with stable results.

349. GOING, W. R. The lifetime participation objective of a required physical education program. Ed.D. in Physical Education, 1984, 212 p. (A. E. Jewett)

To investigate current physical recreation participation levels of University of GA alumni in PEB activites completed as undergraduates, the Lifetime Participation Survey questionnaire was mailed to 100 alumni graduating in 1981, 1977, and 1974. Information provided by 492 respondents was tabulated and analyzed using descriptive statistics. Interest and skill levels in PEB activities increased sharply from pre-enrollment to post-enrollment; current levels of interest and skill in PEB activities increased sharply from pre-enrollment to post-enrollment; current levels of interest and skill in PEB activities dropped to approximately pre-enrollment levels. Very low r's were reported between post-enrollment levels of interest and skill and current participation levels in PEB activities completed as an undergraduate. No sig r's were reported between college levels of interest and skill and current participation levels in physical recreation activities not completed in the undergraduate program. To improve and maintain physical fitness levels was the primary reason for current participation in physical recreation activities. Lack of sufficient interest was the primary reason for current non-participation in PEB activities. A majority of respondents believed the PEB experience had not influenced their degree of participation in physical recreation activities.

350. JAMES, G. M. Older adult perspectives on purposes for engaging in movement activities. Ed.D. in Physical Education, 1984, 121 p. (M. Mullan)

The responses of older adults to a list of 18 purposes for engaging in movement activities were investigaged. The study utilized the Personal Purposes and Meaning in Movement Inventory (PPMMI). The PPMMI was administered to 33 older adult samples between October 1983 and May 1984: 100 Elderhostels enrolled at South GA College (SGC), 189 senior citizens from the Slash Pine Area Planning Distric (SPAPD), and 24 exp Elderhostels enrolled in a movement class at SGC. A X^2 technique was utilized to compare the Elderhostel group responses to the purposes with those of the older adult group and to compare 5 demographic factors within each group with the responses to each of the purposes. A paired t-test was used to compare the pre- and post-inventory responses of the exp group to the purposs. There were sig diff found in each of the 3 analyses. 5 purposes were ranked in the first 10 places as those valued "most meaningful" by both the Elderhostel and older adult group: circulo-respiratory efficiency, self-integration, weight control, enjoyment and participation.

351. POTEAT, C. E. A skills test battery to determine overall racquetball playing ability. Ed.D. in Physical Education, 1983, 102 p. (T. A. Baumgartner)

A skills test battery was developed to determine the racquetball playing ability of male and female college students. 54 males and 53 females from beginning racquetball classes were administerd 2 trials of the test. 43 Ss were then readministered the test to determine stability reliability. All items in the skills test battery were found to have moderate to high internal consistency reliability, stability reliability and concurrent validity. 48 Ss were evaluated by a panel of 3 experts on predetermined criteria. The r for the individual test battery items and the corresponding score by the experts were high (r = .75-.84). The r's among the test battery items suggested the skills test battery should contain the following items: back wall forehand shot, back wall backhand shot, serve and wall volley.

UNIVERSITY OF HOUSTON (D. G. Pease)
HOUSTON, TEXAS

352. BAILES, B. A survey of attitudes of baccalaureate nurse educators about the beliefs of the feminist movement and their identification with those beliefs. Ed.D. in Allied Health Education, 1984, 126 p. (D. W. Evans)

353. DRUCK, A. Patient education: The relation between attitudes and opinions of nurse faculty and nurse clinicians. Ed.D. in Allied Health Education, 1984, 170 p. (D. W. Evans & A. Jackson)

354. SHAW, V. W. The effects of two training methods on the accuracy of skinfold measures. M.Ed. in Physical Education, 1984, 72 p. (J. R. Morrow, Jr.)

6 PE teachers, all inexperienced in taking skinfold measures, were randomly assigned to 1 of 2 exp conditions. 1 group read the "Sum of Skinfold Fat" section of the HRFT manual as training in skinfold measurement while the second group viewed a 22 min video tape detailing the HRFT manual skinfold measures. Lange calipers were made available to

all testers for practice prior to testing. 95 college students were measured on 1 of 3 days at the tricep and subscapular sites by all 6 testers. 2 experienced testers took skinfolds on 49 of the Ss to obtain a criterion measure. Median reliability coefficients for groups of testers were generally high. Testers from the reading group were not as reliable (.84) as the video tape (.95) nor the experts (.96). Generalizability analyses were utilized to quantify sources of variation in the model. Training method was a fixed facet, testers and Ss were random facets. The % of variation for Ss ranged from 60.46% to 86.95% depending upon the site assessed (tricep or sum). The % of variation for methods without experts in the model was zero which indicated that the 2 methods result in similar measures for inexperienced testers. When results for the inexperienced testers were compared to the experts, the variance component for methods increased substantially which indicated a lack of validity of the measures obtained by the inexerienced testers. It is concluded that either training method is successful in achieving reliability of skinfold measures but the validity of the scores is questionable. Training methods may require the personal presence of an expert to enhance the validity of the results.

UNIVERSITY OF IDAHO (D. Zakrajsek)
MOSCOW, IDAHO

355. GOC KARP, G. Theoretical and experiential planning models in secondary school physical education. Ph.D. in Physical Education, 1984, 186 p. (D. Zakrajsek)

This study described and compared the theoretical planning model taught by PE professors in the Northwest, and the reality planning model of JHS PE teachers in the State of ID. Quantitative and qualitative methods were used to describe each model, and the Mann Whitney U and Kendell's coefficient of concordance W statistics were used to compare the theoretical and reality models. Empirical and ethnographic data were collected through a college survey (n=59), teacher close-ended (n=36), and open-ended (n=28) surveys, and a non-participant observation study (n=4). The results indicated at an .05 level of sig that the college professors taught an ends-means model of planning which was not followed by the teachers. The theoretical model focused on student learning while the reality model of the teachers focused on planning for teachng. The teachers planned to keep the students active, organized and to have the lesson flow smoothly. They did not plan to achieve student learning. Routinized methodology, personal philosophy, the administration and student reactions influenced planning.

UNIVERSITY OF ILLINOIS
URBANA-CHAMPAIGN, ILLINOIS

356. BLASIUS, M. A study of the negative work phase in a reciprocal movement. M.S. in Physical Education, 1984, 121 p. (L. Carlton)

357. CAMPBELL, K. Application of optimal control theory to human movement problems: The golf swing. Ph.D. in Physical Education, 1984, 211 p. (J. Groppel)

358. CHRISTIE, I. P. Status of aquatic programs for the handicapped in senior high schools in a midwestern city public school system. M.S. in Physical Education, 1984, 252 p. (R. G. Wright)

359. COUTURIER, L. E. A mechanical analysis of women's lacrosse sticks. M.S. in Physical Education, 1984, 67 p. (T. Ward)

360. GILES, M. Children's sport viewing behavior and adoption of athletes as role models. M.S. in Physical Education, 1984, 93 p. (A. Cheska)

361. GLOUDEN, E. C. A proposed professional

preparation program in physical education for university undergraduate students in Trinidad and Tobago. M.S. in Physical Education, 1984, 111 p. (R. Wright)

362. HASBROOK, C. A. The influence of social class background on childhood sport participation. Ph.D. in Physical Education, 1984, 181 p. (S. Greendorfer)

363. JACKSON, S. J. The formal structure of sport organizations; An analysis of the relationships between selected positional attributes and leadership, racial/ethnic, and status differentiation. M.S. in Physical Education, 1984, 210 p. (J. Loy)

364. LANDHERR, H. Play as an advantageous context to experience intrinsic motivation. M.S. in Physical Education, 1984, 104 p. (G. Roberts)

365. MACKES, B. E. Relationship of pattern element emergence between two locomotor movement patterns in children. 1984, 148 p. (M. Thompson)

366. MILBURN, P. D. Application of a mathematical model of performance as feedback during skill acquisition. Ph.D. in Physical Education, 1984, 177 p. (J. Groppel)

367. MCGINNIS, P. M. Dynamic finite element analysis of a human-implement system in sport; The pole vault. Ph.D. in Physical Education, 1984, 135 p. (I. M. Newell)

368. SAVOLA, J. T. Planning system and processes in the Finnish Central Sports Federation. M.S. in Physical Education, 1984, 207 p. (D. Matthews)

369. SCULLY, D. M. Visual perception of the aesthetic quality of biological motion. M.S. in Physical Education, 1984, 188 p. (K. Newell)

370. SKULDT, A. Body composition and physique of active paraplegic males. M.S. in Physical Education, 1984, 122 p. (T. Lohman)

371. VEALEY, R. The conceptualization and measurement of sport-confidence. Ph.D. in Physical Education, 1984, 273 p. (R. Martens)

372. WOOLRIDGE, M. V. Hemodynamic changes associated with dynamic contractions at different levels of resistance and rates of contraction in trained and untrained males. M.S. in Physical Education, 1984, 147 p. (L. Lussier)

UNIVERSITY OF INDIANA (W. F. Updyke)

373. BECKER, T. J. Kinetic and kinematic parameters of landing impact forces in the dance jump and leap. Ph.D., 1983, 264 p. (J. M. Cooper)

This study investigated the kinetic and kinematic factors of landing technique performed by dancers at the terminal portion of the jump and leap in order to determine those parameters of the landing which might reveal information about the impact forces. 65 Ss, 56 female and 9 male, performed 3 trials each of a dance jump and leap. For each trial the peak force, impulse force, distance of total descent, distance of descent to full heal compression, angle of metatarsal-phalangeal joint at full metatarsal head contact, and angle of knee flexion at max center of gravity descent were measured. The following procedures were used to analyze the data: Ms and SD, ANOVA, Pearson r, Multiple Regression, and Descriptive Proportionality. Findings of the study demonstrated that the Ss whose jump distance of total descent to max knee flexion was greatest landed with the greatest peak force. The Ss whose leap distance of descent to full heel compression contact was greatest landed with the greatest peak force. The combined effects of all variables considered gave no information which was deemed to be statistically sig.

374. ELLARD, J. A. JR. A competency analysis of managers of commercial recreational sport enterprises. Re.D., 1984, 199 p. (W. D. Martin)

The focus of this study was to determine the competencies needed to manage selected commercial recreational sport enterprises, and to develop a profile of the enterprises, the managers, and job opportunities available to rec graduates. A questionnaire was mailed to a sample of 930 bowling, tennis and racquetball enterprises. Managers and assistant managers indicated the importance of and level of proficiency needed in 62 competencies. A discriminant analysis was employed to test for diff between the S groups and enterprises based on the competencies needed. A cluster analysis was employed to reduce the competencies to a simplified structure of "areas of competence". Cluster analysis revealed 5 competency clusters: business procedures, resource management, personnel management, planning and evaluation, and programming techniques. The discriminant analysis yielded sig diff between managers, assistant managers and a sample of commercial rec educators based on competencies needed. Diff exist in the perception of educators and practitioners on competencies needed to manage commercial rec sport enterprises. It was concluded that the commercial rec sport industry is a viable career opportunity for 4-yr rec graduates.

375. FELTNER, M. Kinetic and kinematic parameters of the shoulder joint during the overarm baseball throw. M.S. in Physical Education, 1984, 300 p. (J. Dapena)

This study calculated and discussed the resultant joint torque (TOR) and force at the shoulder joint of the throwing arm during a baseball pitch. 4 intercollegiate male varsity baseball players served as Ss and were filmed during actual game conditions with 2 high-speed movie cameras. The DLT method of cinematography was then used to obtain 3-dimensional landmark data. The throwing arm was modeled as a 4 link kinetic chain (ball, hand, forearm, and upper arm), and the "inverse approach" of kinetic analysis was used to calculate the resultant joint force and TOR at the shoulder joint. Various graphical representations were then utilized to aid in the interpretation and presentation of the data. A positive horizontal adduction TOR was used to initiate the external rotation (ET) of the arm. Once the forearm was vertical and after a slight degree of external rotation, and abduction TOR coupled with the horizontal adduction TOR to continue the external rotation. The internal rotation TOR present during external rotation was caused by the stretching of the internal rotation musculature as the upper arm was externally rotated. The final acceleration of the ball was due to a horizontal adduction TOR at the shoulder and a probable extension TOR at the elbow joint.

376. GADDIS, M. L. Hematologic and cardiodynamic variations with changes in pre-exercise position during submaximal exercise. Pe.D., 1983, 128 p. (J. E. Wilkerson)

This study determined whether pre-exercise position affected blood hematologic and cardiodynamic measurements taken during a submaximal exercise bout. The time course for blood constituent equilibration, as well as the absolute endpoint of equilibration when pre-exercise position is varied, were determined. Ss included 8 adult males. Pre-exercise position treatments were 1 hr of supine rest, or 1 hr of supine rest followed by 1 hr of upright sitting. 30 mins of exercise at 70% of the individual S's VO2 max followed both treatments. Blood samples were drawn throughout rest and exercise and analyzed for hematocrit, hemoglobin concentration, plasma protein concentration, and plasma osmolality. Resting VO2 was estimated. M skin temp, HR and arterial BP were recorded during rest and exercise. Positional change resulted in alterations in pre-exercise hematologic ad cardiodynamic variables. Plasma volume (L) was decreased by upright sitting, and estimated % change of L calculations reflected a sig loss of fluid from the vasculature. Plasma protein content and concentration data permitted the conlusion that upright pre-exercise posture induces loss of a protein-poor fluid from the vasculature. Diff of pre-exercise position sig affected the time course of L and plasma protein changes during exercise.

377. GEORGE, R. L. The relationship of postrotatory nystagmus duration to balance and fine visual-motor coordination among normal, learning disabled, and mildly mentally handicapped children. Pe.D., 1984, 222 p. (P. Surburg)

90 normal, learning disabled (LD), and mildly mentally handicapped (MMH) children, ages 7 through 9 yrs, were randomly selected with 30 Ss representing each S group. Ss were administered twice a battery of tests consisting of the So Cal Postrotary Nystagmus Test, the Fregly and Graybiel Ataxia Test Battery, ad the rotary pursuit and steadiness groove tests. The relationship of nystagmus duration to the motor performance variables was analyzed for each group using multiple regression techniques, while discriminant function analysis was utilized to provide information about group diff. Nystagmus duration was not related to any of the motor performance variables. The variables discriminated among the 3 S groups. The LD and MMH groups did not differ for nystagmus duration, but did exhibit a shorter nystagmus duration than the normal group. Performance of the normal group exceeded that of the LD and MMH groups for all of the motor performance variables except 1 measure of dynamic balance. The LD group demonstrated superior visual-motor skills as compared with the MMH group.

378. GLADWELL, N. J. Profiles of tourists at Indiana state park inns developed from psychographic and socioeconomic characteristics. Re.D., 1984, 145 p. (W. D. Martin)

The purpose of this study was to develop realistic portraits of tourists by examining demographic/socioeconomic and psychographic factors that influence vacation behavior. A modified version of the Leisure Time Activities Questionnaire, developed by Perreault, Darden, and Darden, was administered to a sample of 1200 Ss who stayed at an IN st park inn during the summer, 1983. The questionnaire was to elicit iformation related to vacation activities, generalized behavior predispositions, sociodemographic characteristics, and measures of vacation travel behavior. A partitioning cluster analysis (CA) technique known as k-means clustering was utilized to group individuals on 26 vacation-specific life style variables. MANOVA was conducted to analyze the diff between the groups based on the following variable categories: generalized behavior predispositions, sociodemographic characteristics, vacation behavior measures and vacation sources of information. To better understand the effects of a sig MANOVA, a series of univariate F tests and discriminant analysis were conducted. The results of the CA determined that there were 3 mutually exculusive groups. The MANOVA tests indicated that the 3 clusters were sig diff based upon the 4 variable categories. The series of univariate F tests and discriminant analysis indicated the individual variables, within each category, that were also diff across the 3 clusters.

379. GOODE, L. C. Development of work sampling methodology to analyze park maintenance. Re.D., 1984, 124 p. (W. D. Martin)

This study was concerned with the development of job sampling methodology that could be used by managers on the Blue Ridge Parkway to analyze both routine and non-recurring work performed in the developed rec areas. The study was conducted for 24 days during the summer in 4 developed rec areas. The study was conducted for 24 days during the summer in 4 developed rec areas. Time measurements were recorded for the tasks on a data collection form. A total of 1,472 observations were recorded along with information on weather, type of equipment, and attendance. Data were analyzed using descriptive statistical techniques generating frequencies, median values, percentages, and confidence intervals. Multiple regression procedures were also used to analyze data. Tasks (63) were identified in the work classification of developed area maintenance. The most frequent and time consuming tasks were clean up, minor repair, inspection, trim mow, mowing, personal time, movement to next job, and job set up/breakdown. Work sampling with a daily observation size of 20 per day accurately described the % of time workers spent on tasks. Weather, day of the week, no. of workers and size of an area were found to sig affect the time to perform maintenance. The job sampling methodology developed for this study can analyze quantitatively the maintenance process in an outdoor recreation setting. The methodology functioned best when used to analyze frequently occurring tasks.

380. GROSS, W. C. Locus of control and injuries in collegiate football and soccer players. H.S.D., 1984, 131 p. (J. R. Seffrin)

To obtain locus of control scores the Rotter I-E Locus of Control Scale and the Dahlhauser Football Locus of Control Scale were administered to selected collegiate football and soccer teams. The injury data were compiled by athletic trainers at the selected institutions on a standardized injury report form. Athletes were categorized into diff groups. The first group was incidence of injury: no injury, 1 injury and 2 or more injuries. The second group was severity of injury: no injury, minor injury, moderate injury, major injury and severe injury. The data analysis was completed using the multiple regression and canonical analysis programs from the Statistical Package for Social

Sciences. The results of this study indicate that there were no sig diff between locus of control and injuries, locus of control between collegiate football and soccer players, between incidence of injury and severity of injury between collegiate football and soccer players. The psychological construct of locus of control, as measured by these standardized instruments, does not play a sig role in affecting the incidence and/or severity of injury.

381. HULTSMAN, J. T. The relationship of the study of leisure to the perception of the quality of life. Re.D., 1984, 163 p. (W. D. Martin)

The focus of this investigation was to determine the relationship between demographic and psychological characteristics of individuals majoring in either Business Administration or Leisure Services Administration (LSA) and the degree to which these individuals perceived their lives as possessing quality. An instrument developed to assess quality of life along quantitative dimensions of perceived freedom, intrinsic motivation and high positive affect was administered to 157 individuals pursuing master's degrees in either LSA or Business Administration at universities accredited by the Natl Rec and Park Assoc. Fisher's Linear Discriminant Function Analysis was used to attempt to classify respondents with respect to college major on the basis of their perceived quality of life and demographic characteristics. The discriminant function obtained in the analysis was cross-validated using both empirical and analytical techniques. An A Posteriori Examination of the diff between group Ms of the quality of life variables was conducted using Dunn's Multiple Comparison Procedure. It was hypothesized that, as a result of their education, LSA majors should have an increased appreciation for the value of leisure and thus experience a higher resultant quality of life. Results indicated that the discriminant function was unable to distinguish between majors in the 2 disciplines. The cross-validation procedures tended to support the stability of the model, suggesting that, had true group diff existed, they would have been detected. The A Posteriori contrasts were non-sig, reinforcing the findings of no diff obtained with the discriminant analysis.

382. JOYNER, J. The effects of the three-day workweek on patterns of leisure participation of the blue-collar workers. Re.D., 1984, 135 p. (M. F. Chenery)

This study was concerned with the effects of the 3 day compressed workweek on participation in leisure activities and barriers to participation in leisure activities of a group of blue-collar workers who worked the 3 day workweek for 4 mos. Ss (60) completed a self-administered questionnaire or returned a mailed questionnaire. Changes in the no. of leisure activities participated in (activity change), changes in the frequency of participation (frequency change) and changes in the intensity of barriers to participation when working a 3 day versus a 5 day work schedule were computed. Data gathered were analyzed through descriptive statistical techniques, and Pearson r and X2 statistical tests. Although Ss perceived an increase in their participation in leisure activities when working the 3 day workweek, they did not report sig activity change and frequency change scores. Barriers dealing with lack of time, overcrowding of facilities, activities that were not available, and shift of work, were experienced with greater intensity when working 5 days a wk. The 3 day workweek was reported as a popular alternative to the 5 day workweek. The rearrangement of bulk leisure did not result in increased participation in leisure activities although barriers to participation during the 3 day workweek were less intense.

383. LEEDS, E. M. The relationship between plasma progesterone concentration and plasma low-density lipoprotein concentration in human females. Ph.D., 1984, 61 p. (J. E. Wilkerson)

Plasma lipoprotein concentrations have been observed to change with endurance training; and the cholesterol (chol), carried via the low-density lipoproteins (LDL-C), is the primary substrate for progesterone (P) synthesis in the corpus luteum. If LDL-C concentrations decrease with endurance training, then a decrease in plasma P concentration can be expected. 40 females (18-35 yrs) came to the laboratory on day 2 and day 23 of their menstrual cycle (MC) in a post-absorptive state. A 10 ml venous blood sample was taken. Plasma was analyzed for total chol, high-density lipoprotein chol, triglycerides, LDL-C and P. A walking max aerobic capacity test was performed on the same day. Data were analyzed for diff between days and r among variables, using paired t-tests and Pearson Product-Moment r, respectively. VO2 max was not diff between test days. P and LDL-C had a sig negative r on day 23. VO2 max was not sig r with either variable. Summary: The expected relationship between LDL-C and aerobic fitness level was not observed. However, there was a relationship observed between LDL-C and P in women who had normal luteal P. Thus, VO2 max is not controlling P concentration via alterations in LDL-C concentrations.

384. RIGGINS, R. D. *An analysis of selected biographical and personality characteristics contributing to the leadership effectiveness of instructors ad assistant instructors at the Colorado Outward Bound School: 1982-1983.* Re.D., 1984, 209 p. (T. Rillo)

Evaluation involved the collection of biographical (B10) and personality (PERS) data such that profiles were generated. Selected variables in the profiles of "most effective", "average", and "least effective" instructors, as judged by staff evaluation procedures, were statistically analyzed to determine the relationship between selected B10 variables and leadership effectiveness, and selected PERS variables and leadership effectiveness. Descriptive measures, X^2 analysis and multiple regression procedures were utilized.

6 B10 characteristics were found to sig relate to instructor effectiveness. Instructors rated most effective were older, had more instructing experience, came from larger families, and had spent more time traveling alone than those rated least effective. Fewer had participated as students in Outward Bound (OB) courses and had earned B.A. degrees. Male instructors were rated higher than females, and instructors were rated higher than assistant instructors. Statistical evidence was found linking 8 B10 characteristics to leadership effectiveness, however, none of these characteristics emerged forcefully enough to be recommended as pre-requisites to OB employment. There was no evidence linking PERS characteristics and leadership effectiveness. An implied relationship was drawn between practical field experience and effectiveness.

385. RUSSELL, R. V. Correlates of life satisfaction in retirement. Re.D., 1984, 169 p. (T. R. Deppe)

This study investigated the extent to which retirement is a satisfying life experience. Subproblems were to determine the appropriateness of studying retirement satisfaction as the amount of perceived freedom, intrinsic motivation, and positive feeling experienced in daily life; the relationship of specific circumstances of life and retirement satisfaction; and the role of frequency of leisure activity participation and satisfaction with leisure in retirement satisfaction. 5 questionnaires were administered to 130 residents of retirement residential centers in IN. This instrumentation included a time budget in which respondents reported what they did for 24 hrs and how satisfying they perceived these activities. Also included was a leisure satisfaction scale, a leisure activity participation scale, a life satisfaction scale, and a background information form. The data were analyzed through frequencies, cross tabulations, multiple regression, canonical correlation, and partial correlation statistical techniques. The Ss reported that they felt satisfied as measured by high levels of perceived freedom, intrinsic motivation, and positive feeling in their daily lives. The circumstances of life, as measured by gender, age, marital status, income, health, religiosity, retirement choice, mobility, leisure activity participation, and leisure satisfaction, were found to have a sig relationship to retirement satisfaction. These life circumstance factors together accounted for only 12% of the variation in retirement satisfaction. Accounting for the majory sources of this relationship were gender, income, and leisure satisfaction.

386. SNYDER, S. Risk taking behavior of normal and mentally handicapped adolescents and the relationship of this behavior to their learning. Pe.D., 1984, 173 p. (P. Surburg)

This study assessed the risk taking behavior of normal (N), mildly mentally handicapped (MMH), and moderately mentally handicapped (MOMH) adolescents, and determined if a relationship existed between risk taking behavior in chance, skill situations and learning a motor task. Adolescents (13-18 yrs) identified by the local educational agency as N, MMH, and MOMH were Ss. Each group included 31 Ss which performed 3 tasks utilizing the 4PDS game and modified shuffleboard to assess risk taking behavior, and the stabilometer to assess motor learning performance. Group diff related to risk taking were analyzed using multiple discriminant function analysis. Group diff related to gender, age, order of task, and practice order were analyzed using multivariate statistics. Pearson r were utilized to provide an index of the relationship between the risk taking variables and motor learning. The N group chose sig more moderate risks than the MMH or MOMH groups for skill risk taking (SRT) behavior. There was no diff among groups in chance risk taking (CRT) behavior. There was no relationship between CRT and SRT and gender, age, order of participation, or success in practice. There was no relationship between risk taking behavior and learning a motor task.

387. THOMAS, W. E. A comparison of the effects of two theoretically based constructs on the skill of balance for moderately mentally retarded students. Pe.D., 1984, 172 p. (P. R. Surburg)

Moderately mentally retarded (MMR) students (56) were assigned randomly to 1 of 3 treatment groups. Treatment activities which derived from constructs of the theories of perceptual-motor or sensory integration were presented to Ss for 20 min daily over a 15 wk treatment period. A control treatment group received general PE activities. Tests (3) of balance were administered to Ss pretreatment and post-treatment. The tests used were the Bass Stick Test (static balance), Jump and Turn (dynamic balance), and performance on the Stabilometer. Testing instruments were found to be both reliable and sensitive to performance changes with MMR Ss. Multivariate ANCOVA was implemented to analyze the data. The age of Ss was the covariate for the analysis. While certain assumptions for this analysis were tested and found to meet appropriate criteria, the finding of non-sig diff among treatment groups for the dependent variables negated subsequent analysis. No sig diff were found among the 3 treatment groups: sensory integration, perceptual-motor, and control. Treatments employed in this study to improve Ss balance skill did not change the balance performance of Ss. Correlations of the 3 balance tests were shown to be unrelated. This was interpreted as illustrative of the specificity of the balance skill for moderately MR Ss.

UNIVERSITY OF IOWA (N. P. Burke)
IOWA CITY, IOWA

388. BEDFORD, T. G. Influence of the arterial baroreflex on cardiovascular function in nontrained and trained rats. Ph.D. in Exercise Physiology, 1983, 216 p. (C. M. Tipton)

389. KELLEY, D. R. Changes in university general

operating budgets, and salaries of academicians, administrators, and athletics personnel, 1971-81: A comparative study. Ph.D. in Administration, 1983, 132 p. (G. F. Hansen)

390. KISPERT, C. P. Specificity of cycle ergometer pedaling speed on pulmonary ventilation: acute and chronic effects of exercise. Ph.D. in Therapeutics (Cardiopulmonary), 1984, 332 p. (D. H. Nielsen)

391. MORIOKA, H. N. Herzberg's Theory applied to graduate faculty in departments of physical education offering doctoral degrees. Ph.D. in Administration, 1983, 195 p. (G. F. Hansen)

392. OKUNROTIFA, E. B. Physical education education programs for the handicapped children in schools in southwest Nigeria. Ph.D. in Corrections and Reconditioning, 1983, 214 p. (G. M. Asprey)

393. PERSONIUS, W. J. Low-back pain and "sciatica" symptoms--development of a clinical method to identify the source. Ph.D. in Therapeutics, 1984. (G. F. Soderberg)

394. REES, T. E. Perceptions and professional performances of recipients of Ph.D. degrees in physical education. The University of Iowa: Pre-specialization era (1954-66) versus post-specialization era (1966-80). Ph.D. in Administration, 1984, 244 p. (G. F. Hansen)

395. SCHUMAN, B. J. A profile of women leaders in physical education, sport, athletics and dance organizations and a study of role models and mentors of the leaders. Ph.D. in Administration, 1984, 166 p. (N. P. Burke)

Questionnaires were returned from 82 national presidents from AAHPERD, the Academy, AIAW, NAGWS, NAPEHE, NASPE and NDA organizations. Ages ranged from 33 to 97 (M=63). The majority of the women were first-born of first-born daughters, single, childless, majored in PE in undergraduate school, and earned a doctorate. The majority of respondents enrolled as undergraduates in programs which were for female students only and which had more female than male faculty members. Their masters' and doctoral degrees were completed at school with coeducational DEPTS. Most of the respondents' parents had at least a SHS education and lived at home during the respondents' childhoods. The fathers were gnerally employed full-time in white collar, managerial, or administrative positions; the mothers were not usually employed outside the home. Respondents reported that their parents often encouraged them to seek a professional career and to pursue advanced degrees. During their undergraduate and graduate years, most of the women studied had female role models. As their career progressed, the respondents were encouraged by other females to take leadership roles in the field. While some women listed both males and females as mentors, all indicated that they had been mentored by a woman. They also reported that in their later careers, colleagues played an influential role. During their professional careers, these leaders have mentored both males and females.

396. SPARKS, III, W. G. Nature and policies of boards governing athletics in institutions in division I-A, National Collegiate Athletic Association, and perceptions of board chairpersons of the ideal board. Ph.D. in Administration, 1983, 124 p. (G. F. Hansen)

397. STEFFEN, J. P. A survey of computer utilization by directors of athletics in NCAA Division I institutions. M.A., 1983, 74 p. (G. F. Hansen)

398. ZINN, J. L. Study of relationship between

admission aptitude tests for physical education course of study and selected first-year course grades. Ph.D. in Measurement and Evaluation, 1984, 114 p. (D. R. Casady and J. Maxey)

UNIVERSITY OF KANSAS (L. M. Mawson)
LAWRENCE, KANSAS

399. ADAMS, M. D. Comparison of male and female basketball coaches' agreement on NCAA recruiting regulations and their enforcement. M.S. in Education, 1981, 94 p. (L. M. Mawson)

The Basketball Recruiting Questionnaire, a 22 item Likert-type instrument, was completed by 56 male and female head basketball coaches at Division I NCAA institutions to determine if there were any sig diff between men and women basketball coaches. The extent of agreement with 5 current collegiate athletic recruiting regulations and perception of enforcement potential in NCAA Division I institutions were investigated. Specifically, the regulations included number of contacts allowed in recruiting; the length of period allowed in contacting recruits; alumni involvement in recruiting; the transportation, visitation, and entertainment of recruits; and the proposed proposition 48d. A t-test was used to determine if there were any sig diff between the M scores of the male and female reponses at $p<.05$. Men and women coaches differed sig in their agreement with the contact Period Recruitment Rule, in that men moderatley agreed with the rule, while women were in slight disagreement. All other comparisons were determined to be similar between men and women.

400. BIELIK, E. Relationship of release velocity to key delivery phase variables of highly skilled decathletes in the javelin event. M.S. in Education, 1984, 119 p. (C. J. Zebas)

Certain delivery phase factors influencing the resultant release velocity of the javelin were cinematographically analyzed in highly skilled decathletes chosen as participants of the U.S. Olympic Training Center's Elite Developmental Program. The factors analyzed as influencing resultant release velocity were: estimated hip center resultant velocity at the right foot plant of the delivery phase, total delivery phase time interval, and post knee angle during the release of the javelin. The resultant javelin accelerations at key positions of the delivery phase also were investigated. A total of 45 complete throws were photographed with high speed filming techniques from a lateral view. The Pearson-Product Moment Correlation Coefficient was used to compute each variable's relationship with the resultant release velocity. It was concluded that resultant release velocity: had no relationship (r = 0.0583) with the estimated hip center velocity at initiation of the delivery phase, no relationship (r = 0.2584) with the delivery phase time interval, and no relationship (r = 0.1440) with the post leg knee angle at javelin release. It also was concluded that the better Ss, according to their respective release velocities, had greater acceleration magnitudes.

401. BUFTON-ROSE, S. The influence of instruction on adult lifetime sport participation. M.S. in Education, 1984, 136 p. (L. M. Mawson)

202 adults who were found participating in bowling, golf, and tennis in the Kansas City area completed the Lifetime Sports Information Questionnaire (LSIQ), to determne if adult male and female participation in selected lifetime sports was related to school age instructional experiences the adults had in school PE, community recreation program, or private instruction prior to or after the Lifetime Sports Foundation Program. Diff between Ss grouped under age 40 were compared to Ss over 40 using t-tests to analyze the influence that school age instruction or participation had on these adults' current participation. In bowling, more of

the under age 40 adults had received sig more school instruction than the over 40 age group. A much larger % of males had received sig more instruction and participated sig more in golf than females during their school age yrs. A majority of the under age 40 tennis participants, both male and female, had received instruction or participated during their school age yrs. Sig diff were found between females and the 2 age groups when considering school instructed or non-instructed, but not between the males who were school instructed or non-instructed.

402. CALDER, S. E. The effects of specificity in plyometric training for the discus throw. M.S. in Education, 1984, 169 p. (C. J. Zebas)

A cinematographical comparison of the movement patterns of an intercollegiate female discus thrower was made before, during, and after specialized plyometric training within the discus ring. An inclined platform which measured 5 in at its greatest height with a 7° slope was placed at the back of the discus circle during training sessions. A total of 18 sequences were filmed using a regulation discus ring. It was concluded that: plyometric training inhibited the drive of the left leg stepping to the center of the circle; elapsed time for the entire throw decreased after plyometric training; a proper throwing base was not established to provide the sequential transfer of energy from the right ankle to the right hand; the S's angle of release was low considering the low velocity of release.

403. HAYNES, K. Professionalization of attitude toward play of high school interscholastic athletes. M.S. in Education, 1984, 118 p. (L. M. Mawson)

A total of 550 male and female sophomore SHS athletes in 31 class 6A through class 1A SHS in the state of KS were administered the Webb Scale to determine their professionalization of attitudes toward the playing of SHS sport, and to determine if any sig diff in play attitudes existed between girls and boys due to school size and/or activity preference. A factor design (ANOVA) was used to analyze the data to determine if any diff existed between males and females in team and individual sports among the 3 paired school size classifications. The post hoc analysis for Simple Effects was used to identify the origin of diff in sig interactions of the variables. The results indicated that male and female athletes were sig diff in their level of professionalized attitude due to sport type or school size. A sig interaction effect was found between the variables of sex and sport type. The post hoc analysis for simple effects applied to the interacting variables of sex and sport type revealed that sex remained the dominate predictor of level of professionalized attitude, and that the degree of sex diff in team sport was greater than the diff found in individual sports.

404. HULL, S. Young athlete's attitude toward female sport participation. M.S. in Education, 1983, 60 p. (L. M. Mawson)

The purpose of this study was to determine whether there was a sig diff between attitudes of boys' and girls' who have participated in organized sport programs toward female's participation in sport and whether these attitudes differed between fifth, eighth and eleventh grade students. The Children's Attitudes Toward Female's Involvement in Sport Questionnaire was administered to 161 male and female students in the Shawnee Mission KS School District, who were involved in organized sport programs. Responses were converted to a 5 point scale and statistically analyzed by a 2-way ANOVA concerning sex, grade and the interaction of sex and grade. Results revealed that there was a sig diff between boys' and girls' attitudes toward female's participation in sport. When attitudes were compared across grade levels, no sig diff was evident. Examination of the interaction of sex and grade yielded a sig diff. The Student Newman-Keuls post hoc test showed that girls at all grade levels had more favorable attitudes toward female's sport involvement than did boys.

405. ROWLAND, K. L. *State and trait anxiety levels of participants in recreational competitive activities.* M.S. in Education, 1983, 82 p. (L. M. Mawson)

28 college students participating in a university summer recreation program were administered the State Trait Anxiety Inventory (STAI) in order to measure the competitive states and personality traits of anxiety immediately prior to competition in organized recreational activity, and to determine whether there was a sig diff in participants in triad, dual, and single recreational activities on each of the 2 anxiety variables. Data were grouped according to the nature of the activity (triad, dual, single) and as group M scores for state and trait anxiety. 2 one-way ANOVA tests were computed among the 3 groups, 1 for state anxiety and 1 for trait anxiety. Although there were no sig diff between any of the 3 group M for state anxiety nor for trait anxiety, the results of the SD of the 3 groups suggested that recreational athletes who competed alone were more variable in their responses to a perceived threat than were recreational athletes who competed as a cooperative team. Comparisons of group M to established STAI percentile rankings for college students showed state and trait anxiety in all groups measured to be low-to-average rankings (24th-46th percentiles) except for singles tennis state anxiety, which appeared at a moderately high, 70th percentile.

406. RUTHERFORD, M. *The effect of a mandibular orthopedic repositioning appliance on hip and leg fatigue.* M.S. in Education, 1984, 66 p. (C. J. Zebas)

The effectiveness of a Mandibular Orthopedic repositioning Appliance (MORA) on muscle and leg fatigue was investigated using 3 normal college-aged males who were cardiovascularly trained, but not weight trained. The Ss were tested 3 days a wk for each of the 3 diff treatment situations: no mouthguard, a stocktray mouthguard and a MORA device. Duration of each treatment varied from S to S in accordance with the direct systematic replication procedure. Each treatment was administered until a baseline measure of endurance was obtained. Complete repetitions with 150% body wt were recorded on trials by repetition graph for analysis. 2 of the 3 Ss showed improved performance in hip and leg sled endurance test performance while wearing the MORA device. It was concluded that the stocktray and the MORA device can improve endurance tests as measured on a hip and leg sled. The possibility of improved endurance from a MORA device appears to have potential for the future of sports endurance training and performance.

UNIVERSITY OF MASSACHUSETTS (P. S. Freedson)
AMHERST, MASSACHUSETTS

407. BOUCHER, J. P. Modelled functional electrical stimulation effects upon neuromuscular coordination mechanisms underlying speed of human movement. Ph.D. in Exercise Science, 1984, 354 p. (W. Kroll)

The purpose of this study was to investigate the effects of functional electrical stimulation (FES) upon neuromuscular mechanisms underlying speed of movement. 36 Ss allocated into a control, a practice, and 4 FES groups were measured on 5 test days. Practice was given to all 36 Ss on the 3 first test days, and the last 3 test days were interspersed with 2 wks of treatments. 27 parameters were derived from the kinematic, integrated EMG and strength data. All 27 parameters were found to be reliable (F = 0.49 - 0.97). MT was shown to decrease sig ($p<0.05$) with practice. Following practice, MT was also sig ($p<0.05$) affected by FES treatments. The antagonist muscle activity pattern was sig modified by FES, whereas, the agonist muscle propulsive activity remained unchanged. Before practice the agonist muscle played a more important role in performance prediction than after practice. After practice the role of the antagonist muscle in performance prediction increased noticeably. Both the treatment effect and regression analyses revealed that the antagonist muscle activity played a major role in the control of ballistic movements. Finally, FES can be considered as an efficient technique to manipulate performance following its stabilization through practice.

408. COSTELLO, K. C. Neuromuscular coordination mechanisms of ballistic limb movement, age, activity level, and practice effects. M.S. in Exercise Science, 1984, 228 p. (W. P. Kroll)

14 women (50-73 yrs) were place equally into physically active and inactive groups in order to assess the relationship between age, activity level, and the modifications elicited in the triphasic EMG pattern during practice under 2 inertial load conditions. During each of 4 testing sessions kinematic and EMG data were collected while Ss executed 15 trials of a max speed forearm flexion task performed in the sagittal plane under load conditions L0 and L1. Results demonstrated sig shortening over days for movement time (47.1 ms. L0 and 29.6 ms. L1), biceps brachii (BB) 2nd duration (29.1 ms. L0 and 15.6 ms. L1), triceps brachii (TB) 2nd motor time (88.8 ms. L0 and 88.9 ms. L1), and TB 2nd duration (56 ms. L0 and 48.3 ms. L1), and sig lengthening of BB 1st to TB 2nd latency (41.4 ms. L0 and 55.9 ms. L1). The inactive group demonstrated sig longer burst durations for BB 1st (22.8 ms.) and TB 2nd (23.25 ms.) than the active group for L0. Inertial loading sig lengthened stabilized movement time by 71.7 ms. and shortened % acceleration time by 17.3%. BB 1st peak, BB 1st duration, TB 2nd motor time and duration, and BB 1st to TB 2nd were lengthened under L1. Practice and inertial loading altered the intercorrelation structure of the parameters investigated. Results demonstrated practice induced modifications similar in nature, but more pronounced, than

observed in younger samples, and that activity level may be associated with maintenance of efficient, coordinated movement.

409. DE FRANK. The effects of training and detraining on body composition and physiological parameters of collegiate basketball players. M.S. in Exercise Science, 1984, 141 p. (F. I. Katch)

11 members of the varsity basketball team and 9 control Ss were evaluated during a 20 wk training season and in 10 wks of detraining on selected criterion measures. % body fat was estimated from densitometry. HR was monitored during 10 min of submaximal exercise and 5 min of recovery on a bicycle ergometer. Max VO2 was predicted from the Astrand-Rhyming nomogram using a M of submaximal HR. Anaerobic power was estimated by a regression equation that included vertical jump ht and body wt. Changes from pre- to mid-season in body composition of the exp group included a sig 15% reduction in % body fat and a sig increase of body density (0.2%). There was a 15% decrease in the sum of fatfolds and a 1% reduction in trunk and upper extremity girth measures. Predicted max VO2 increased 13% at the mid-season assessment, while submaximal exercise and recovery HR decreased 4 to 5%. Sig increases in % body fat (15%) and HR sums (8 to 18%), as well as reductions in body density (0.2%) and max VO2 (10%) were noted from mid- to post-season. Vertical jumping ability and anaerobic power scores did not change throughout the testing period. It appears that the basketball players were most highly trained at mid-season in terms of optimal body composition and aerobic responses to exercise. The non-specificity of training during the season may have hindered the respective development of aerobic and anaerobic capacity. Anaerobic capacity was more stable and perhaps a more important measure over the entire testing period. Detraining apparently began sometime in the latter half of the competitive basketball season.

410. DICK, R. W. Acute cardiopulmonary response to neutral buoyancy water immersion. M.S. in Exercise Science, 1984, 100 p. (F. I. Katch)

8 college age males were assessed for acute cardiopulmonary responses to normal sensory water immersion. HR, respiratory rate, and 02 consumption were evaluated during a seated pre-test and 2 supine exp (bed, water float) conditions. Core body temp, posture, and hydrostatic imbalances were controlled to isolate the neutral buoyancy effect. Stability of all measures was established within and across 3 test days. Intraclass ANOVA established baseline consistency for HR (r = .90) and respiratory rate (r = .81). Consistency of 02 consumption was not established due to individual biovariation (r = .05). HR varied non-sig by 1 b/min between exp conditions while respiratory rate was statistically diff between the bed and the water (F = 8.20 DF = 1,7 p = .05). The diff between bed (12.8 breaths/min) and water (11.7 breaths/min) conditions, however, was not physiologically important. 02 consumption varied by only 1% between exp conditions. The results suggest that neutral buoyancy water immersion does not cause a relaxation response defined by a decrease in HR and 02 consumption.

411. DRUMM, S. D. Changes in body composition, anthropometry, and arm radiography following ten weeks of hydraulic resistive circuit training. M.S. in Exercise Science, 1985, 179 p. (F. I. Katch)

10 females (M age = 21.5 yrs) and 9 males (M age = 22.5 yrs) participated in a circuit strength training program using hydraulic resistive equipment (Hydra-Fitness; Belton, Texas). An additional 8 females (M age = 21.6 yrs) and 7 males (M age = 24.6 yrs) served as controls. Ss performed 8 exercises (4 upper body, 4 lower body) for 20 sec each with a 40 sec rest, 3 circuits/day during wks 1-6 and 4 circuits/day during wks 7-10. Pre- and post-measures of

body composition included 6 fatfolds, 14 girths, hydrostatic weighting and radiographic widths of muscle and fat of the right upper arm. For the exp females, REANOVA revealed a sig increase in lean body wt (0.7 kg, 1.6%) and a sig decrease in % fat by 1.8 percentage units (7.2%). Waist girth decreased sig for females (2.5 cm, 3.5%), and biceps girth increased sig for males by 0.6 cm or 1.8%. Muscle width at mid-biceps (x-ray) increased sig in males by 2.32 mm (4.0%) and 8.63 mm (4.2%) in summed muscle widths. The magnitude of change in the criterion measures of body composition are consistent with previous data for programs of circuit strength training. The observed changes in muscle widths demonstrate the potential of this technique for quantifying subtle changes in limb morphology with muscular training.

412. THARION, W. J. Perceptual moment length and tracking capabilities under restricted viewing conditions. M.S. in Exercise Science, 1984, 136 p. (W. P. Kroll)

The major purpose of the study was to investigate the role that perceptual moment has with respect to tracking skills. In addition, the effect of simple RT upon tracking skills was assessed. A secondary problem was to evaluate the point of performance breakdown in the skills of intercepting and catching of tennis balls under restricted viewing conditions. 16 Ss were tested on 3 days on an apparent motion test, simple RT, and intercepting and catching ability under 4 diff viewing conditions (full, 3/4, 1/2, and 1/4 light). An ANOVA with a Scheffe's test revealed that performance drops off sig when reducing the light from 1/2 to 1/4 of the ball flight. Perceptual moment length obtained through the apparent motion test did not correlate sig with the tracking tasks. RT did correlate with the tracking tasks. Gender diff were assessed through the use of an ANOVA design. Diff between males and females were found to be sig only on the catching task.

413. TURCOTTE, L. P. The effects of hydraulic resistive training on maximal oxygen uptake and anaerobic threshold of college-aged females. M.S. in Exercise Science, 1984, 125 p. (W. Byrnes)

This study evaluated the effects of 10 wks of hydraulic resistive exercise training on max VO2 and anaerobic threshold determined as the lactate breakpoint (ATla) and the 4 mMol blood lactate point (AT4mM). 16 females (m=21 yrs) exercised 3 days/wk on an 8 station hydraulic resistive exercise circuit. Initially, 3 sets (1 set = 20 secs of max effort followed by 40 secs of rest) were completed at each station. After 6 wks, the Ss progressed to 4 sets. 5 females (M=23 yrs) served as controls. Max VO2 was determined with a treadmill protocol, and arterialized blood samples were obtained at the end of each 3 min stage for lactate analysis. Following training, max VO2, ATla, and AT4mM remained unchanged from initial values of 42 ± 1.7, 27 ± 0.8, and 22 ± 1.1 ml/kg/min, respectively.

414. WESTERLIND, K. C. The effect of chronic resistive training on selected androgens and their relationship to lean body weight and strength in college females. M.S. in Exercise Science, 1984, 97 p. (W. C. Byrnes and P. S. Freedson)

Serum levels of testosterone (t), androstenedione (A), and sex hormone binding globulin (SHBG) were measured in college females (13 exp, 5 control) prior to and following 10 wks of max effort hydraulic resistive exercise (3 times/wk; 1 hr session). S's body composition (hydrostatic weighing) and strength (free wt bench press and squat) were assessed. M (±SD) pre-training hormone levels for the exp and control groups were T=.93 ± .51 and .76 ± .10 ng/ml, A=320.1 ± 84.4 and 347.0 ± 129.8 ng/dl, and SHBG=1.40 ± .37 and 1.41 ± .38 ug/dl, respectively. A Mann Whitney U Test and Wilcoxon Matched-Pairs Signed Ranks Test revealed no sig change in T or SHBG for either group. A sig M decrease (25.3%) in A was observed in both groups and was attributed to seasonal variation and/or stress associated high pre-training levels.

Spearman rho correlational analysis indicated no sig relationship between T, A, and/or SHBG with strength scores or lean body wt ($-.49<r<.47$). Results suggests that (1) serum androgen levels do not increase with resistance training and (2) higher androgen levels are not associated with greater strength or muscle mass in females.

UNIVERSITY OF MINNESOTA (J. F. Alexander)
MINNEAPOLIS, MINNESOTA

415. HOOKE, A. P. Nature and implications of home exercise practiced by older adults. M.A. in Physical Education, 1984. (M. L. Young)

Using the Leisure Time Physical Activity Questionnaire developed by Taylor, Jacobs, Schucker, Knudsen, Leon, and Debacker, the Changing Patterns of Physical Activity Questionnaire and the Home Exercise Questionnire developed by the author, the nature of active leisure pursuits of elderly females was investigated using interview techniques. The 60 volunteer Ss (ages 61-92 yrs) were residents of low (n=30) and moderate income (n=30) urban apartment buildings in Minnesota. Based on reported participation in home exercise, each income group was divided into home exercise and non-home exercise sub-groups. A 2 x 2 ANOVA (df = 1/56; $p<0.05$) yielded an F = 4.69, where, regardless of income, participants in home exercise were more active than non-home exercise participants. The preferred activity modes selected were: low income group, walking (80%), group exercise (50%), and own exercise (23%); moderate income group, walking (86%), own exercise (23%), group exercise (18%), dancing (18%), bowling (10%), and bicycling (10%). Perceived limitations to participation in activities were health (55%), lack of programs and facilities (55%), lack of time (39%), motivation (29%), weather (12%), companionship (12%), and knowledge of activity (10%). Ss reporting home exercise participation (n=30) performed a M of 6.7 separate exercises in a M of 7.8 min/day. A X^2 analysis indicated that medical personnel and mass media are the most common sources of exercise information.

416. KENNISON, J. A. Sex-role stereotypes and evaluations of administrative performance by municipal recreation and park administrators.

Sex-role stereotypes and differential evaluations of male and female administrators were determined for 136 recreation and park administrators in the Great Lakes Region of the NRPA. Analysis of sex-role stereotyping revealed that recreation and park administrators are reluctant to assign general characteristics to either males or females. These results may indicate a trend toward characterizing administrators as androgynous rather than in masculine terms. No sig diff in the evaluations of male and female administrators were found. In addition, no sig relationships were found between sex-role stereotyping and evaluations of performance. The results of this study differed from those of similar studies in other fields. Sex-role stereotyping and differential evaluations of performance do not appear to be major factors contributing to the few no. of females in administrative positions in parks and recreation.

417. KLAPPA, S. G. Comparison of cranking vs pulling arm ergometry for elicitation of maximal oxygen consumption in female nordic skiers. (R. C. Serfass)

18 female nordic skiers (M age = 23.4 ± 4.5 yrs) were divided into high (n=7), moderate (n=6), and low (n=5) performance groups based on a combination of their best 5 and 10 km race times. Ss were randomly assigned 2 cranking and 2 pulling tests on a modified Monark Rehab Trainer for the purpose of eliciting arm VO2 max (M values were used for statistical analysis). The Monark trainer was modified using a system of pulleys to more closely simulate arm

pulling during nordic skiing. A 2 x 3 (tests x groups) ANOVA with repeated measures across tests produced a sig main effect among groups for VO2 max, V_E, and R, while between test diff were found only for R. Tukey's w-test revealed that the high performance ski group had sig higher arm VO2 max values (M = 33.38 ml/kg/min) than the low performance group (M = 24.69 ml/kg/min). The moderate performance group VO2 max value of 27.29 ml/kg/min was not sig diff from the values of the other 2 groups. Reliability coefficients for arm VO2 max protocols for the total group (n=18) were 0.87 for cranking and 0.83 for pulling. Linear regression analysis used to predict arm pulling in ml/kg/min from arm cranking VO2 max revealed a r of 0.86 with a standard error of estimate of 150 ml. These data indicate that arm cranking protocols may be used to provide reasonable predictions of the more specific arm pulling VO2 max in female skiers.

418. MACGOWAN, H. E. The kinematic analysis of the walking gait of congenitally blind and sighted children: ages 6-10 years.

Sighted (n=9) and congenitally blind (n=9) children, aged from 6-10 yrs were compared on a total of 35 kinematic parameters of the walking gait. Each S was filmed at 50 frames per sec, using a high-speed 16 mm camera and 2 trials per S were digitized. The digitized data were analyzed by a computer program which provided values used in the calculation of the kinematic parameters. There were a total of 11 sig ($p<.05$) parameters: 5 linear, 3 temporal and 3 positional. The sig linear parameters were the stride length, the ratio of the stride length to the total body ht and to the leg length, the velocity of the trunk and the total body velocity. The 3 sig temporal parameters were the time spent in total support and double support and the percentage of total cycle time and toe-off and the knee at mid-swing were the sig positional parameters. The congenitally blind children took shorter steps than the sighted children and walked more slowly. They also spent more time in support, in particular the double-support phase.

419. MIEURE, T. S. *A study of the value and usage of present recruitment procedures and practices as defined by college basketball coaches located in NCAA, Division III.* M.A., 1982.

Recruitment techniques used by basketball coaches were examined to determine the relationship between value and usage. 143 of 286 NCAA III institutions were surveyed with a return rate of 62%. Statistical analysis included measures of central tendency and X^2. Results of coaches' ratings by category included: *Identification* - referrals from SHS coaches ranked first for both value and usage. Attendance at games and the use of letters to coaches were valued second and third respectively. *Assessment* - attitude, personal observation and scholastic attainment ranked first, second and third. These assessment techniques also rated as the top techniques 'used' although reversed with scholastic performance first, followed by assessment of attitude and personal observation. *Selection* - terms of both value and usage, consideration of programmatic needs was first followed by ranking prospects according to ability and ranking of returning players. *Recruitment* - value and usage remained the same with the use of phone contacts to prospects first followed by written and personal contacts with recruits, coaches and parent; on-campus recruitment visits with admission offices, players, post-season visits with academic personnel in the area of interest ranked the same for both value and usage.

420. ROGERS, M. A. *Creatine kinase isoenzymes in serum and skeletal muscle of trained marathon runners.* Ph.D. in Physical Education, 1984, 116 p. (G. A. Stull)

14 male marathon runners were tested during 9 wks of training and before and after a 42.2 km race. Total CK

(TCK) activity in serum was assayed weekly during training, 48 hrs pre-, and 24, 48, 72, and 96 hrs post-race. Serum % CK-MB was determined serially post-race whereas total CK activity and %CK-MB were assayed in gastrocnemius muscle homogenates sampled 9 wks pre-race, 48 hrs pre-race, and 24 hrs post-race. % CK-MB in gastrocnemius muscle homogenates increased from 5.3% to 7.7% ($p<.05$) after 9 wks of training. Serum CK activity peaked 24 hrs post-race with a TCK activity of 3,322 U/L and a CK-MB of 5.1%. CK-MB in gastrocnemius muscle increased ($p<.05$) after the race with a mean CK-MB of 10.5%; however, TCK activity in the gastrocnemius did not change in response to the race. No sig relationship was detected between % slow twitch muscle fibers and CK-MB activity in muscle at 9 wks pre-race, 48 hrs pre-race, or 24 hrs post-race.

UNIVERSITY OF MISSISSIPPI

421. BUCHANAN, A. M. A descriptive study of intended, actual, and perceived behavior of physical education student teachers and experienced teachers. M.Ed., 1984. (J. L. Cole)

Cheffers Adaptation of Flanders Interaction Analysis System was the instrument used to determine actual classroom interaction. Batchelder's Teacher Questionnaire on Objectives was the instrument used to obtain subjects' perceptions of classroom interactions. Ss were 5 pre-service teachers who were enrolled in the spring of 1984 PE student teaching class at the University of MS and 5 in-service PE teachers who were graduates of the University of MS PE professional program between 1972 and 1978. Ss were videotaped teaching a class on 2 separate days of 1 wk. Percentages obtained from the pre- and post-class portions of the Teacher Questionnaire on Objectives were compared to the percentages obtained with Cheffers Adaptation of Flanders Interaction Analysis System. ANOVA was used to interpret the data. Where sig was found the Scheffe' procedure was used to locate the source of the diff ($p<.05$). Results showed that when sample M were combined there was a sig diff between intended and actual behavior. When student teacher M were compared there was no sig diff between intended and actual behavior but there was a sig diff between their perceived and actual behavior. When experienced teacher M were compared there was no sig diff between intended and actual behavior, nor was there a sig diff between perceived and actual behavior. There was no sig diff between student teachers' and experienced teachers' intended, perceived, and actual behavior.

UNIVERSITY OF NEW ORLEANS (R. L. Eason)
NEW ORLEANS, LOUISIANA

422. HRAPMANN, Y. Personality of marathoners as examined by the Catell 16 PF. 1984, 69 p. (P. Krebs)

The Catell 16 PF Qustionnaire was used to assess the personality characteristics of male marathon runners and cyclists. The major questions were whether 30 marathoners (M age = 40.8 yrs, M yrs running = 10.2) and 22 cyclists (M age = 31.4 yrs, M yrs riding = 9.1) differed in personality characteristics, and whether their personalities were diff from the normal population. Each S completed the 16 PF and a demographic/training data survey. The data were analyzed through use of a two-tailed t-test and Pearson product-moment r. The results indicated that marathoners and cyclists were similar in all personality characteristics, but were diff from the normal population on 4 of the 16 factors. The marathoners and cyclists tended to be more reserved and impersonal, more intelligent, more assertive and aggressive, and more self-sufficient than the normal population.

UNIVERSITY OF NORTH CAROLINA
CHAPEL HILL, NORTH CAROLINA

423. AVERY, K. E. Cardiovascular responses to exercise on land versus in the water. M.A. in Physical Education, 1984. (R. McMurray)

424. BARRY, M. G. The influence of various reasons upon the participation of students in intramural sports at the University of North Carolina. M.A. in Physical Education, 1983. (E. Shields)

425. COTE, D. J. Comparison of three treatment procedures for minimizing ankle sprain swelling. M.A. in Physical Education, 1984. (W. Prentice)

426. EGGEBEEN, L. A comparison of the effect of relaxation enhanced and traditional teaching methodologies on the decrease of anxiety and the improvement of beginning swimming skills. M.A. in Physical Education, 1984. (J. M. Silva)

427. FAIR, R. W. An analytical study of Atlantic Coast Conference basketball's season ticket subscription television package. M.A. in Physical Education, 1984. (J. Billing)

428. FULK, P. A. The effect of static stretching and a physical warm-up on 40-yard dash performance. M.A. in Physical Education, 1984. (J. Billing)

429. HICKS, L. L. The effect of residual smoke on smokers and non-smokers during exercise. M.A. in Physical Education, 1984. (R. G. McMurray)

430. JENKINS, F. M. A comparison of the effectiveness of three different methods of external ankle stabilization in the prevention of ankle injuries. M.A. in Physical Education, 1984. (P. Robinson)

431. MARTUCCI, T. F. A correlation between the professional preparation and performance level of

high school wrestling coaches in North Carolina. M.A. in Physical Education, 1984. (F. Mueller)

432. MCLAUGHLIN, J. E. A comparison of selected physiological parameters between participants and dropouts from a corporate fitness facility. M.A. in Physical Education, 1984. (R. G. McMurray)

433. NELSON, S. R. The effects of supplemental circuit weight training upon running performance. M.A. in Physical Education, 1984. 'J. Billing)

434. ROSENBERG, D. A case study analysis of four university elective physical education programs. M.A. in Physical Education, 1984. (F. Mueller)

435. SMITH, L. A. Ventilatory response and changing stride frequency during steady-state exercise. M.A. in Physical Education, 1984. (R. G. McMurray)

436. SWICKIE, S. The use of a soft orthotic device to control the pain associated with chondromalacia patellae. M.A. in Physical Education, 1983. (W. E. Prentice)

437. THOMPSON, D. L. Selected characteristics of adherers and dropouts in an executive fitness program. M.A. in Physical Education, 1984. (R. G. McMurray)

438. TRIPP, S. E. The effects of video games in the reaction time and anticipation time of players and non-players. M.A. in Physical Education, 1984. (F. Pleasants)

439. WALKER, A. A comparison of the attentional styles of professional and amateur collegiate basketball officials. M.A. in Physical Education, 1984. (J. M. Silva)

440. WATSON, P. M. The immediate effects of exercise on selected skinfold thicknesses. M.A. in Physical Education, 1984. (P. Robinson)

441. YAMAGUCHI, H. Carbohydrate loading in multiple distance runs. M.A. in Physical Education, 1984. (R. G. McMurray)

UNIVERSITY OF NORTH CAROLINA (M. K. Solleder)
GREENSBORO, NORTH CAROLINA

442. ALLISON, P. C. An introspective inquiry into what and how preservice physical education teachers observe in an unguided, early field experience. Ed.D. in Physical Education, 1984, 130 p. (K. R. Barrett)

Using 2 introspective research techniques, thinking aloud and stimulated recall interview, 6 junior-level PE preservice students' observations were studied. Audio and video tape recording facilitated data collection. Thinking aloud and stimulated recall interview protocols were analyzed using a constant comparative analytic strategy. Findings revealed that the preservice teachers reported observations about pupils' movement responses, organizational tasks and patterns, and behavioral characteristics of pupils. It was also found the 3 perceptual processes were employed by the observers: expectancy set, contrast, and evaluation. In addition, the beginning of rudimentary strategies of observing were evidenced by the Ss. There appeared to be no relationship between the content of observing and the perceptual processes employed while observing by preservice PE teachers in an unguided, early field experience.

443. ANHOLT, G. Assessment of selected physiological parameters following a walking with weights program by middle aged men. M.S., 1984, 76 p. (D. L. Spitler)

444. BATES, M. Material manipulations. M.F.A. in Dance, 1984, 90 p. (G. Cheney)

445. BERRY, E. Effects of warmup on vertical jump performance of male and female subjects. M.S., 1984, 42 p. (B. W. Evans)

446. BRAXTON, J. B. Movement experience in modern dance: a phenomenological inquiry. Ed.D. in Physical Education, 1984, 110 p. (K. R. Barrett)

This study focused on how students in higher education make meaning out of the dance movement experience. The investigation was guided by the question - how can we better understand the movement of dance as experienced by students by exploring and describing a lived experience of movement using the theory of phenomenological reduction, the concept of intentionality, and the hermeneutic approach? In separate interviews, 4 dancers in higher education described a common experience they had in a master class. The investigator identified 6 themes common among interviews: (a) kinesthetic awareness, (b) feelings, (c) movement as symbol, (d) concentration, (e) use of imagery, and (f) direction. Also identified were one theme unique to each dancer and one Important Movement in the class that had a deep personal meaning. The study revealed that reflection is important to a dancer's understanding of dance. The inquiry also suggested that all dance experiences can be seen in an educative way - education for individual meaning.

447. BUCKNER, N. Ritual. M.F.A. in Dance, 1984, 31 p. (G. Cheney)

448. CARDEN, K. R. The history of women's sports at Elon College, 1889-1982. M.Ed., 1984, 196 p. (R. McGee)

449. CLAIBORNE, J. M. Relationship of the anaerobic threshold and running performance in female

recreational runners. Ed.D. in Physical Education, 1984, 82 p. (R. McGee)

The study assessed the relationship between anaerobic threshold values and performance times on the 5 km and 10 km distance races in female recreational runners. Anaerobic threshold (AT), VO2 max, and related measures were determined for 31 runners aged 18-35 who were running between 15-30 miles per wk at the onset of the study. Physiological data were gathered from max and submax treadmill exercise. AT was based upon respiratory gas exchange and was defined as the departure from linearity of VEVO2 without a corresponding increase in VEVCO2. Mean AT-VO2 was 34.98 ml/kg/min (1.978 l/min) while max VO2 averaged 45.42 ml/kg/min (2.5556 l/min). Mean %AT-VO2 was 78.8%. Average treadmill velocity at AT was 152.53 m/min. The correlations between max VO2 and 10 km and 5 km performances were sig (r = -.67 and -.58, respectively) while those between AT-VO2 and running performances were not sig. When demographic characteristics were adjusted, treadmill velocity at AT and %AT-VO2 were the best predictors of 10 km performance. Treadmill velocity at AT alone was the best predictor of 5 km performance when the effects of physical variables were partialed out. Additional parameters were suggested for better prediction.

450. DI NARDO, J. J. The effects of competitive and cooperative game instruction on state anxiety levels of first and second grade students. M.S., 1984, 104 p. (T. J. Martinek)

451. EVERETT, B. B. A comparison of the readibility level of selected, printed health education materials and the reading level of the Guilford County Health Department child health clients. M.Ed., 1984, 94 p. (K. K. King)

452. FERRAR, A. Ecos andinas. M.F.A. in Dance, 1984, 46 p. (G. Cheney)

453. FIKE, C. *Synchronisms.* M.F.A. in Dance, 1984, 79 p. (G. Cheney)

454. FULTON, R. D. *Relationship between achieving tendency and sport motivation of college basketball players.* M.S., 1984, 83 p. (P. Berlin)

455. GASKILL, P. L. *The general perceptions of North Carolina recreation administrators of the legal aspects of municipal liability.* Ed.D. in Higher Ed. Administration, 1985, 100 p. (J. Bryson)

The purposes of this investigation were to describe the past and present position of the legislature and the courts in MC with regard to the liability of parks ad rec agencies in the state, and to assess the legal judgment of rec administrators in NC as it relates to liability through an analysis of a legal judgment survey. The litigation analysis revealed that the doctrine of governmental immunity has been abrogated by the courts on numerous occasions; the most sig litigation involved negligence and the assignment by the court of a proprietary function to parks and rec activities. The receipt of revenues is the major criteria used in assigning the proprietary label, and generally such services are not immune from suit. Analysis of the survey data returned by 72 rec directors revealed that there appears to be a discrepancy between services perceived to be most liable and previously litigated rec services in MC. The t-test and correlation coefficient analysis of the data revealed that there were no sig diff or correlations between or among the total, municipal, or county groups. In general, directors were *uncertain* about departmental immunity, governmental vs. proprietary status, the legality of waivers , and Section 1983 Civil Rights Liability. This indicates that the dissemination of legal information to practicing directors of rec should become a major objective of the professional associations and rec curricula in NC.

456. GUENTHER, S. P. *The emotional well-being of*

school personnel in Wilkes County, North Carolina. M.Ed., 1983, 59 p. (K. Howell)

457. JOHNSON, J. B. *Effects of source credibility and sex of source on persuasiveness of health communication.* M.Ed., 1983, 32 p. (M. Dignan)

458. JONES, M. M. *The relationships among measures of social support and psychological reactions of cancer patients to their illness.* M.Ed., 1984, 72 p. (K. Howell)

459. KNEEPKENS, N. A. *The comparison of attitudes of students, parents and faculty toward physical education at Southern Door High School, Brussels, Wisconsin.* M.S., 1984, 87 p. (R. McGee)

460. LEO, T. R. *Visuo-motor behavior rehearsal, physical practice, and performance of selected basketball skill tests by senior high school girls.* M.S., 1984, 102 p. (P. Berlin)

461. MC LESTER, B. M. *Predictors of success in passing the state board pool examination in one associate degree nursing program.* M.Ed., 1984, 52 p. (M. B. Dignan)

462. MORROW, R. *Diving proficiency in relation to shoulder, trunk, hip, knee, and ankle strength.* M.Ed., 1984, 59 p. (R. C. Gayle)

463. ST. CLAIR, S. I. *The Play Day/Sport Day movement in selected colleges of the south.* Ed.D. in Physical Education, 1984, 168 p. (P. Berlin)

The presence and characteristics of the Play Day/Sport Day approach to women's sport at Winthrop College, Longwood College, James Madison University and The University of NC at Greensboro were studied. On-site visits, written records and personal interviews were used to collect the data. Findings revealed that the prevailng medical and educational ideas of the period were influential in developing the model of the Play Day/Sport Day. Specific events with PE and in society-at-large affected the movement. Over the yrs, the character of the events changed from combined teams of players to intact units. The Play Day/Sport Day model eventually outlived its usefulness. In sum, it represented a response to a particular need for sport interaction which came at a time when the roles of women were changing and when old values were questioned. Play Days/Sport Days were a conservative approach by well intentioned administrators who advocated a slower pace for women.

464. TURNER, R. B. Teacher invitations and effectiveness as reported by physical education students, grades 9-12. Ed.D. in Physical Education, 1983, 103 p. (G. M. Hennis)

Inviting (I-Type) and effective (E-Type) behaviors of PE teachers for grades 9-12 were the focus of this study. The IN-Scale was completed by 206 students enrolled in 14 PE classes. Findings indicated a sig positive relationship (r = .84) between the total scores of I-Type and E-Type behaviors. Similarly sig positive relationships existed between the combination categories of inviting-effective (r = .59) and disinviting-noneffective (r = .63) teacher behaviors. 6 of the 14 teachers were perceived as demonstrating disinviting-noneffective behaviors by 50% or more of their students. It was also found that high expectancy students perceived their PE teachers as being more inviting and effective than low expectancy students. There were no diff between I-Type and E-Type teacher behaviors as perceived by athletes and nonathletes or by students indicating they learned very much and worked very hard in PE classes.

465. WALLER, R. Dr. Anna Marie Gove and the development

of North Carolina at Greensboro. M.Ed., 1984, 98 p. (R. McGee)

466. WASHINGTON, A. M. *Adjustment to retirement among women professional golfers with respect to two selected theories of aging.* M.Ed., 1984, 111 p. (P. Berlin)

467. WEBB, K. M. *An investigation of preferred and currently engaged in recreation activities among older adults.* M.Ed., 1984, 95 p. (K. Howell)

468. WILSON, R. *A physical fitness knowledge test for first graders.* Ed.D. in Physical Education, 1984, 211 p. (K. R. Barrett)

The purpose of this study was to construct and validate a pictorial paper-and-pencil fitness knowledge test for first graders based on the content in the AAHPERD *Basic Stuff* with a focus on the *Exercise Physiology* component. The procedure for developing the test involved construction of a 2-way table of specifications delineating *Basic Stuff* content and using a cognitive taxonomy from the ETS. Following 2 pilot studies and their analyses, a final instrument containing 30 items was developed and administered to 215 NC first graders. Statistical validity was established using Flanagan's Item Analysis. Functioning of the test item choices, difficulty rating and discrimination were determined. 21 items met the criteria in all areas. Kuder-Richardson Formula 20 yielded reliability of .41. Rasch Analysis calibrated the item difficulty. Using established criteria, items were judged "good" according the the Rasch Model.

UNIVERSITY OF NORTHERN COLORADO (M. Behling)
GREELEY, COLORADO

469. HAUTALA, R. M. *The influence of an enforced preparatory set on the reaction time, movement*

time, and total response time of children. Ed.D. in Physical Education, 1984, 126 p. (T. M. Malumphy)

First, third, and fifth grade Ss (N = 176) performed a complex motor task in response to an auditory stimulus, while assuming an assigned enforced preparatory set. The similarity of effect of enforced set was seen at all grade levels and for both sexes. Sig diff in performance existed between the sexes. Males were sig faster on all measures except for first grade RT performances. Performance M and SD indicated great variability and overlap between the sex groups. Each successive grade performed sig better than preceding grades. A strong tendency for Ss to assume a natural sensory set was noted. There was no sig effect of natural set on performance under an enforced set. The practice effect was similar for both sexes within a given grade level.

470. SAPPENFIELD, G. O. Effects of color and variable size/weight of an object on catching performance of elementary age boys and girls. Ed.D. in Physical Education, 1984, 79 p. (M. Shirley)

This study investigated the effects of color of Frisbee discs (blue, yellow, white) and size/weight of Frisbee discs (97 gm, 141 gm models) on the catching performance of second-, fourth-, and sixth-grade boys and girls. A total of 90 randomly selected Ss--15 male second graders; 15 female fourth graders; 15 male sixth graders; and 15 female sixth graders--attempted to catch 30 Frisbee discs thrown from 10 yds. The Frisbee discs were randomly presented in 6 color-size/weight combination groups of 5 in each group. Each catching attempt was scored on a 5-point scale. The dependent variable of catching performance score was analyzed using a 4-way ANOVA. Only grade level proved sig. Sixth graders performed better than second and fourth graders. Boys did not perform sig better than girls. The diff in margin between M scores of boys vs girls became less as the grade level increased. Color and size/weight of discs had no sig effect on catching scores. It was concluded that discs might be used in recreation and physical settings to attempt to equalize varying skill levels of boys and girls.

UNIVERSITY OF OREGON (E. R. Reuter)
EUGENE, OREGON

471. BAUER, J. R. A study of intramural programs in selected community colleges in western Canada during the school year 1980-1981. M.S. in Physical Education, 1984, 138 p. (E. Wooten-Kolan)

472. BENDER, R. S. The effects a vision training program has on the ball-handling skills of children with visually-related learning disabilities. Ph.D. in Physical Education, 1984, 85 p. (E. Wooten-Kolan)

This study compared 20 visually-related learning disability children and 20 regular classroom children between the ages of 9 and 12 yrs. The Purdue Perceptual-Motor Survey, Subtest of Ocular Control, was administered to both groups. The learning disability children who exhibited ocular control difficulties and children who exhibited no ocular control difficulties were randomly assigned to either an exp or control group. The exp group received a PE program of vision training for 30 min 3 times a wk from the adapted PE specialist. The control group received a regular classroom PE program daily for 30 min from the classroom teacher. The results indicated: a PE program of vision training did not sig improve the ocular control of children with visually-related learning disabilities; children with visually-related learning disabilities in a PE training program of vision training made sig greater gains on their ball-handling skills as compared to children with visually-related learning disabilities who received a regular classroom PE program; and a PE program of vision training had greater effect on the ball-handling skills of children with visually-related learning disabilities than the regular classroom children.

473. BURTON, A. W. Age-related changes in the abilities of children to phase or integrate individual response units into a coordinated motor skill. Ph.D. in Physical Education, 1984, 123 p. (M. Woollacott)

The exp included 40 male Ss, who were divided equally into 4 age groups: 6-yr olds, 9-yr olds, 12-yr olds, and adults. The exp apparatus consisted of a 6-button response board, a small buzzer, and various electronic control equipment. A tone of a constant duration was initiated by the release of the 1st button. The task of the S was to press the remaining 5 buttons in a manner such that the last button push coincided with termination of the tone. The results indicated that there were developmental diff in phasing activities but not in the ability to integrate response subunits. The phasing consistency of MT and pause time components reached a mature level around 9 yrs, while the phasing consistency of movement speed components was still decreasing at 12 yrs. The ability to transfer a phasing pattern across speeds matured around 12 yrs for pause time and movement speed components, with 6-yr olds unable to transfer phasing patterns at all. Unexpectedly, there were no age diff revealed by these rs. The highest rs (approx .60) were found for adjacent pause time components.

474. BU-SALITH, R. M. The attitude toward physical recreation of male Saudi students studying in the United States. Ph.D. in Physical Education, 1984, 142 p. (R. J. Smith)

MacDonald's short-form Attitude Inventory was selected to measure attitude toward physical rec. It was translated into Arabic and mailed to 915 randomly selected Ss. There were 334 usable questionnaires returned. The dependent variable was the 30-item attitude scale; the independent variables were age, marital status, academic classification, major field of study, yrs spent in the US, population of the attended college or university, athletic background, voluntary participation in physical rec, and undesirable experiences in sports and/or PE. Age, the population of the attended college or university, and duration of living in the US did not have sig rs with attitude toward physical rec. Students who were single, graduates, athletes, and who had undesirable experiences in sports and/or PE were found to have more favorable attitudes toward physical rec than their counterparts. Participation in voluntary physical rec activities was found to be related to a more positive attitude toward such activities. The general attitude of the present sample was positive toward physical rec.

475. COLLEN, R. Passage . . . by our own efforts: a choreographic protrait based on oral history. M.S. in Dance, 1984, 214 p. (J. W. Descutner)

PASSAGE . . . BY OUR OWN EFFORTS investigated the utilization of an oral history interview as the prime motivation for a choreographic work; exploring methods of artistically enhancing and translating the essence of the interview through dance. Based on the experiences of the choreographer's grandmother, Katie Weber (1888-), this work incorporated the main character's own voice as part of the sound score. Acting, costumes, lighting, paintings, and music were integral n contributing to the choreography as a successful vehicle for revealing oral history. This study explored the balance between literal and abstract dance and incorporated the voices of the dancers speaking on stage. The 55 min concert was presented in the M. Frances Dougherty Theatre, Unversity of OR, on April 6 and 7, 1984. The work was evaluated by the audience and a panel of experts, utilizing a questionnaire constructed by the choreographer. (Videotape on file - DEPT of Dance).

476. FRIEDRICHS, W. D. The influence of leader behaviors, coach attributes, and institutional variables on performance ad satisfaction of collegiate basketball teams. Ph.D. in Physical Education, 1984, 119 p. (M. R. Weiss)

Male collegiate basketball players (n = 251) representing 23 NAIA teams assessed their coach's leader behaviors using the Leadership Scale for Sports (Chelladurai and Saleh, 1981). These athletes also indicated their satisfaction with various facets of their athletic experience using a satisfaction scale modified to accommodate the sport setting. Multivariate and univariate regression techniques were used to analyze the influence of institutional, coach attribute, and leader behavior variables on win/loss record and athlete satisfaction. The results of this study suggested that leader behavior dimensions and coach attributes were the most important predictors of athlete satisfaction, while few variables were related to win/loss record. Coaches who engaged in more frequent rewarding behavior, social support behavior, and a democratic decision style produced more satisfied athletes. Moreover, younger coaches and those with past successful win/loss records were related to higher levels of athlete satisfaction.

477. IMRIE-CAREY, M. A study of selected benefits of a pilot wellness program implemented for Oregon state workers. M.S. in School and Community Health, 1984, 72 p. (L. G. Davis)

Employees of 7 state agencies participated in the study. There were 391 Ss in the wellness program and 79 in the control group. The treatment consisted of pre- and post-medical screening with a computerized health risk assessment plus one wellness class and 2 fitness classes per wk for 26 wks. Data were collected 6 mths after the start of the program. Statistical analysis of the data revealed no sig diff between the lost work time of the study group compared to past yrs, or compared to the control group. The work attitudes of the study group were not sig diff from the attitudes of the control group following the program. It was concluded the pilot wellness program did not affect the lost work time or greatly improve the work attitudes of the program participants during the time-frame of the study.

478. LANDER, J. E. Effects of center of mass manipulation on the performance of the squat exercise. Ph.D. in Physical Education, 1984, 93 p. (B. T. Bates)

6 skilled male performers in the squat exercise volunteered as Ss. Each S performed 5 trials of the activity using their 5 rep max effort wt for each of 3 following load ht conditions: normal bar and bar placement; modified bar with the center of mass lowered 18%; and modified bar with the center of mass lowered 36% of body ht below the normal bar position. Ground reaction force data were acquired from a Kistler force platform interfaced to a Tektronix 4052 Graphic System. Simultaneously, intra-abdominal pressure was recorded using a balloon catheter connected to a Gould:Statham pressure sensor inserted into the rectum. All performances were filmed at 50 fps using a Locam high speed 16mm camera. Few sig diff ($p<0.05$) were observed using the combined analysis across Ss. Many diff were observed using the individual analyses although not all of the comparisons varied in the same manner. The results suggested that the stress on the spine was reduced as the center of mass of the avr-weight system was lowered. 2 hypothesized explanations for this phenomenon were greater stability in the frontal plane and/or the ability of Ss to utilize a more erect trunk posture when using the modified bar.

479. LEE, C. A. Emotional responses to the swimming experience as reported by skilled and unskilled adult swimmers. M.S. in Physical Education, 1984, 73 p. (E. Bressan)

480. LOMBARDI, V. P. Total serum lactate dehydrogenase

activity, heart subunit activity and maximum oxygen consumption in endurance versus strength trained athletes. Ph.D. in Physical Education, 1984, 256 p. (E. Wooten-Kolan)

The purpose of the study was to establish baseline LDH values for elite athletes and to investigate the rs between max VO2, total serum LDH activity and isoenzyme distribution. 30 males between the ages of 19 and 38 served as Ss. The 6 groups of 5 Ss each included runners, swimmers, wrestlers, wt trained athletes, and sedentary individuals. LDH total activity (IU/L) was positively correlated with max VO2 expressed in l/min, but this r was not sig at the .05 level. Furthermore, LDH total activity was not sig correlated with max VO2 expressed relative to body wt (kg) or lean body mass (kg). Planned comparisons indicated that the max VO2's of runners and swimmers were sig diff from that of the weight trained athletes ($p<.0001$). The % of total LDH activity accounted for by heart subunits was greater for the endurance versus strength trained athletes, but was not sig at the .05 level. The results of this study indicate that LDH total activity in serum is a poor predictor of max VO2. However, sig clinical abberations in total, resting LDH activity and isoenzyme patterns may occur in apparently healthy, strength trained athletes.

481. MACPHERSON, B. L. The effect of exercise and epinephrine on insulin binding to mononuclear leucocytes. M.S. in Physical Education, 1984, 82 p. (E. Evonuk)

482. MARITIM, G. K. Status of alcohol and drug education in Oregon schools. Ph.D. in School and Community Health, 1984, 168 p. (L. G. Davis and W. E. Smith)

The primary information base was data collected by an instrument consisting of 19 items which was sent to all

1,400 OR school principals. Usable data were obtained from 583 (42%) of these principals. To obtain additional data and further check the validity of the information provided by the school principals, a personal interview involving 128 students, 47 teachers and 44 parents was conducted in 16 randomly selected schools. The overall results of the study indicated that: the time spent in all grades (K-12) for alcohol, drugs, and traffic safety education was minimal--an average of 2.5 hrs (classroom time) per yr for each of the 3 topics; school-developed curricula were the most widely used instructional media for both alcohol and drug education; a combination of instructional methods was reported being used and the 3 most favored methods were films, lectures, and outside speakers; strong community support for alcohol and drug education programs was expressed by principals, teachers, parents and students; and development and implementation of alcohol and drug education programs was favored by the majority of the principals.

483. MATTIA, G. Profile of program directors, staff, and programs in corporate fitness. M.S. in Physical Education, 1984, 112 p. (J. D. Seelbach)

484. MILLER, B. M. The effects of various modes of training on selected fitness components. M.S. in Physical Education, 1984, 96 p. (E. Evonuk)

485. NAGY, M. C. Attributional differences in health status and life satisfactions in older women: a comparison between widows and non-widows. Ph.D. in Health Education, 1982, 138 p. (L. G. Davis)

A total of 356 women drawn from a metropolitan area of western OR responded to a 3-part questionnaire modeled after an instrument used by Fry and Ghosh (1980). Both widows and married women were satisfied with their lives; 86% rated their level of satisfaction as either "satisfied" or "very satisfied." In addition, widows and non-widows were quite happy and no diff between the 2 groups were found. The respondents envisioned their health status as quite favorable and again marital status was not a factor in this assessment. Descriptive data indicated that family members, friendship with others, and hard work were the top 3 components of women's life satisfaction for both widows and married women. Hard work recorded the highest M score rating as an attribute of health status for both study groups. Luck and social status received the lowest ratings. When study Ss were matched (N = 53) on age, education, and socioeconomic status, similar results occurred. Widows and non-widows identified the same attributes as being important for life satisfaction and health status with 1 exception - widows felt recreation played a more sig role in their health status than non-widows. Length of widowhood was not found to be a factor in widows' perception of their health status or life satisfaction.

486. NEAL, V. A. Coed versus same-sex audience effects on the learning of a balance task. Ph.D. in Physical Education, 1984, 71 p. (M. R. Weiss)

90 boys and 90 girls from 2 JHSs were assiged to 1 of 3 exp conditions in a 2 x 2 x 3 x 10 (sex by school by audience type by trials) factorial design. 1 school scheduled PE classes on a coed basis and 1 scheduled classes on a sex-segregated basis. The 3 audience conditions consisted of an alone group, a same-sex audience (4 boys or 4 girls) and a coed audience (2 boys and 2 girls). Ss performed 10 trials of 30 sec each on a stabilometer balance task, with time on center balance serving as the dependent variable. Prior to performance, instructions were give to heighten evaluation apprehension and measures of state anxiety and expectancy of success were obtained. A repeated measures ANOVA for performance revealed that Ss in the alone group performed best, followed by the coed and same-sex audience, although these scores were not sig diff. All audience type conditions showed anxiety increases from basal to pre-preformance levels with the coed and same-sex groups showing the largest gains. ANCOVA revealed nonsig diff

among the groups on pre-performance and anxiety diff between coed and same-sex audience groups suggest that JHS students learn equally well under coeducational and segregated conditions, thereby providing some empirical support against the claim that coed classes are detrimental to learning.

487. PECK, S. L. The relationship between age, training, and physical characteristics and menstrual cycle variability in female runners. M.S. in Physical Education, 1984, 102 p. (E. Evonuk)

488. ROMANCE, T. J. A program to promote moral development through elementary school physical education. Ph.D. in Physical Education, 1984, 134 p. (M. R. Weiss)

2 5th grade PE classes (N = 32) served as control and exp groups and participated in identical PE activities during an 8 wk program. The exp group was exposed to special teaching strategies designed to foster moral growth, whereas the control group was not. These strategies were based on structural developmental theory of moral development and emphasized dialogue and the creation of moral balances. Moral reasoning data were gathered using pre- and post-test interviews. The t test was employed to compare gain scores between the exp and control groups. T test analyses on the moral reasoning gain scores showed sig diff between the groups in moral growth, with the exp group showing greater improvement in sport, life and overall moral reasoning. T tests conducted on within-group changes showed sig pre- to post-test improvement for the exp group in sport and overall moral reasoning. Concomitant growth did not occur in the control group. These results indicate that a specific program designed to promote moral development through PE can affect changes in levels of moral growth.

489. SCHWAN, K. The academic preparation of the 1983-84 high school basketball coaches in Minnesota,

North Dakota, and Oregon. M.S. in Physical Education, 1984, 176 p. (B. Sisley)

490. STANBROUGH, M. E. The effects of orally ingested sodium bicarbonate on short duration maximal exericse in trained middle distance runners. Ph.D. in Physical Education, 1984, 123 p. (E. Evonuk)

12 trained male middle distance runners performed 2 runs to exhaustion on a motor-driven treadmill at a workload corresponding to 135% of the S's max VO2. Sodium bicarbonate or a placebo (ground wheat) amounting to a dose of 0.25 gm per kg of body wt. was orally ingested 2 hrs prior to exercise. Venous blood was collected before exercise, immediately after exercise, and 5 min after cessation of exercise and analyzed for pH, bicarbonate, and lactate concentrations. Although exercise time was longer in the sodium bicarbonate condition (2.22.2 min) compared to the placebo condition (2.18.3 min), this diff was not sig. Lactate concentrations for the sodium bicarbonate and placebo conditions were not sig diff for the 3 time periods. Blood pH prior to exercise was sig elevated by the oral ingestion of sodium bicarbonate, although there was no sig diff in blood pH immediately after exercise or 5 min after exercise. Blood bicarbonate levels were sig higher in the sodium bicarbonate condition throughout the exp. The decrease in blood bicarbonate from pre- to immediately postexercise in the sodium bicarbonate condition sig exceeded that in the placebo condition. The results suggest that orally induced alkalosis has only a small effect on short duration max exercise but increases the buffering of extracellular hydrogen ions.

491. STEVENS, N. H. School health promotion: a study of exemplary districts. Ph.D. in School and Community Health, 1984, 143 p. (L. G. Davis)

Staff members in 12 OR school districts completed a mailed survey that assessed general attitudes about health promotion, staff and student behaviors and organizational indicators reflecting a positive attitude toward health promotion. A 2-day site visit was also made to each district. Superintendents and principals were interviewed; staff and students were queried informally to gather in-depth information on the scope and nature of health promotion in the district. Once survey and site visit data were analyzed, districts were reclassified into "hot," "warm" and "cold" categories and the characteristics of each group examined. Site visit data revealed that "hot" districts possessed 3 unique characteristics that set them apart from the others: shared excitement about existing health-related options for staff, students and community members; administrative interest in the integration of additional options to improve the physical/psychological well-being of distric personnel; and respect for HE as an academic discipline. Survey data disclosed stronger attitudes, more positive behaviors and greater nos. of organizational indicators in "hot" districts. Additionally, discriminant analysis identified 3 variables that successfully discriminated between district climates: staff services (such as health risk appraisals, behavior modification workshops, etc.), staff inservice, and administrative behaviors.

492. SYMONS, J. D. The effects of chronic exercise on prostacyclin (PGI2, epoprostenol), high density lipoproteins, (HDL), and total cholesterol (TC). Ph.D. in Physical Education, 1984, 115 p. (S. Vigna and E. Wooten-Kolan)

The purpose of the present study was to quantify the blood levels of 6-keto-PGF$_1$alpha, which is a member of the prostaglandin family and the stable metabolite of prostacyclin (PGI$_2$, epoprostenol); high density lipoproteins (HDL), and total cholesterol (TC). Values of the aforementioned atherosclerotic parameters were compared between sedentary humans and those which had undergone an 8 wk training program. 6-keto-PGF$_1$alpha was quantified by radioimmunoassay on unextracted plasma utilizing ^{125}I as the radioactive tracer. HDL and TC were spectrophotometrically analyzed utilizing the method outlined by Trinder. Results of the present study indicate that there was no sig diff ($p > 0.05$) in the levels of 6-keto-PGF$_1$alpha and the HDL/TC ratio at the 0.05 level. Previous findings have suggested that the time required for max platelet aggregation may be increased by chronic exercise. The results indicate that this alteration in platelet aggregation is not due to an increase in PGI$_2$/TxA$_2$ ratio.

493. TAIT, R. The politicization of the modern Olympic Games. Ph.D. in Physical Education, 1984, 268 p. (M. J. Ellis)

The reasons, methods, and perpetration of political incidents in the Olympic Games between 1896 and 1980 were analyzed. It was found tha 68% of the variance in the no. of political incidents that have occurred in the Olympic forum was related to the increase in the media coverage of the Games. The amount of variance correlating to the increased size of the Games was not sig. The study concluded that the political character of Olympism was dominating the Olympic forum to a point where the Olympic movement was losing touch with its original goals and ideals. Persons involved in the Olympic mevement and extensive literature sources were used to gather data pointing to this conclusion. Many of the people interviewed agreed that the future of Olympism could be protected to some degree by altering the symbolic meaning of Olympic victory and reducing the political importance of a nation's acceptance into the Olympic movement.

494. TEICHMAN, M. J. Repeat gonorrhea infections: an analysis of sexual patterns, attitudes and knowledge. M.S. in School and Community Health, 1984, 110 p. (L. G. Davis)

This study examined repeated infections due to Neisseria gonorrhoeae by evaluating the importance of sexual patterns, attitudes and knowledge among 3 groups of VD clinic patients, examining for diff between groups. The prospective analysis was done on 214 patients in OR, comparing patients' responses to a questionnaire, and by evaluating demographic data. Repeaters were found to have more sexual partners, and these partners more frequently had other sex partners than did the groups of 1st-time infected and never-infected patients. Repeaters were more often men than women, and repeater women were youngest of all the groups of clinic patients. Less than 0.1% of the county's population had 14.0% of gonorrhea morbidity. Findings point to the importance of persistent and swift epidemiological followup among this group of high risk patients.

495. WILSON, J. E. The incidence and types of injuries to female athletes at the University of Oregon. M.S. in Physical Education, 1984, 122 p. (E. Wooten-Kolan)

UNIVERSITY OF SARASOTA
SARASOTA, FLORIDA

496. NIE, D. A comparative study for effective monitoring immunization compliance methods for suburban school districts in Cook County, Illinois. Ed.D., 1985, 92 p. (R. Goddard)

497. PEARCE, L. H. A comparison of certification requirements of lifesaving with the skills needed by the lifeguard. Ed.D., 1984, 119 p. (M. D. Brown)

498. RIZZI, D. Attitude change toward the physically handicapped through the use of film. Ed.D., 1984, 79 p. (D. Gallender)

UNIVERSITY OF SOUTHERN MISSISSIPPI

499. COLEMAN, B. H. The relationship between four components of physical fitness and absenteeism among registered nurses at the Southwest Mississippi Regional Medical Center in McComb, Mississippi. M.S. in Physical Education, 1985. (D. Cundiff)

500. COLLIGON, J. C. Influence of religiosity and religious denomination on risk of coronary heart disease, selected controllable risk factors, and health habits. Ph.D. in Exercise Science, 1985. (D. Cundiff)

501. CORTES, C. W. The effects of a one-time progressive muscular relaxation session on cardiovascular responses to two submaximal workloads on the treadmill. M.S. in Physical Education, 1985. (T. Boone)

502. FORTUNE, D. A. An investigation of the sex knowledge of selected university students in the South. M.S. in Health and Safety Education, 1985. (W. H. Yarrow)

503. FRENTZ, K. L. The effect of carotid artery palpation on heart rate, blood pressure and electrocardiograph changes at two pre-determined exercise intensities. M.S. in Physical Education, 1984. (T. Boone)

504. PASSMAN, J. L. A study concerning the current status of medical care for the injured athlete in Mississippi high schools. M.S. in Physical Education, 1984. (M. Maneval)

505. READ, D. L. A comparison of the training effects of aerobic dance and jogging among college females. M.S. in Physical Education, 1985. (D. Cundiff)

506. RODGERS, S. L. Acute blood pressure and heart rate responses to a weight training circuit. Ph.D. in Exercise Science, 1984. (W. Cooper)

507. SHOEMAKER, T. A. Recreational use of Ross Barnett Reservoir by its subdivision residents. M.S. in Recreation, 1984. (Burchell)

UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE

508. HAMMITT, S. A. The influence of social group, past experience, and attitude on participation and non-participation in sports and physical activities. Ed.D. in Physical Education, 1984, 78 p. (C. A. Wrisberg)

A 4 page questionnaire was administered to 300 students in the registration line at the University of TN, Knoxville in the fall of 1983. A Likert scale was used to assess the relative influence of past experience, social group influence, and attitudes toward physical activity on present level of participation in sports and/or physical activity. Multiple regression procedures were used to determine the percentage of variance in participation level attributable to each of the 3 factors and a path analysis technique was employed to determine possible causal relationships among the sets of measured variables. The results indicated that nearly all of the respondents had positive attitudes toward participation in sport/physical activity and that increases in the level of participation were associated with increases in positive attitude, social group influence, ad level of past experience. Results from the path analysis further suggested that attitudes influence participation behavior through an influence on a person's intention to participate.

509. KRAMER, P. G. The effects of aerobic and ventilatory muscle training on pulmonary function and submaximal work performance in subjects with

pre-clinical chronic obstructive pulmonary disease. Ed.D. in Physical Education, 1984, 90 p. (E. T. Howley)

37 Ss were assigned to 1 of 4 test groups: control, aerobic training, ventilatory training and a combination of aerobic/ventilatory training. The Ss were given pre-training test of pulmonary function and submax work performance. The training period was 6 wks in duration. Aerobic trainers rode a bicycle ergometer 3 times a wk for a specified period of time and with a prescribed HR. The ventilatory trainers ventilated on a re-breathing tube 5 days a wk for a prescribed period of time. The aerobic and aerobic/ventilatory groups demonstrated a reduction in post-training HR at a given workload. The ventilatory and aerobic/ventilatory groups exhibited an increase in max voluntary ventilation for 10 sec (MVW_{10}). The results indicate that it is possible for Ss with pre-clinical chronic obstructive pulmonary disease to demonstrate improvement in submax work performance independent of changes in pulmonary function and that these same Ss can show improvement in MVW_{10} independent of changes in submax work performance.

510. MC LEAN, E. The relationship of attentional style and anxiety patterns to performance tendencies in intercollegiate basketball players. Ed.D. in Physical Education, 1984, 115 p. (C. A. Wrisberg)

Recently developed tests of attentional style and competitive anxiety were administered to 2 male, Division I NCAA basketball players in an attempt to assess the relationship of each dispositional characteristic to the performance of each athlete in each of 10 intercollegiate games. The Ss' attentional profiles were determined by the Test of Attentional and Interpersonal Style (Nideffer, 1981). Trait anxiety was assessed using Martens' (1977) Sport Competition Anxiety Test and the level of state anxiety for each athlete for each game was estimated by responses on the State anxiety Inventory (Spielberger, 1970). Both Ss played a position which was judged to be similar in task and situational demands. The quality of individual game performance was determined by combining performance statistics (e.g., turnover with 20 sec left in a tie game) and post-game evaluations by the coach. The results suggested that the game performance of each athlete was generally consistent with his attentional and anxiety characteristics, although the coach's subjective ratings did not always coincide with objective performance statistics. It was concluded that coaches may benefit from the kind of supplemental information provided by the sport-specific assessment instruments used in this study.

511. MOORE, J. O. The effect of different times of mental practice during the acquisition of a perceptual motor skill. M.S. in Physical Education, 1984, 61 p. (P. A. Beitel)

512. MYERS, B. C. Coronary heart disease risk factor variables in black and white females 18-24 years. Ph.D. in Education, 1984. (B. D. Franks)

This study was based on two hypotheses: that black and white females are different in levels of heart disease risk factors, ad that risk factors are related differently to BP among black and white females 18-24 yrs of age. In the first study, total MET hrs of physical activity per wk, body mass index, sum of triceps and suscapular skinfolds, and frequency of added fats and sugars were found to be sig discriminators of the racial groups. In the second study, body mass index, cigarette smoking, and father's history of hypertension accounted for 51.5% of the variance in SBP for blacks. Father's educational level, cigarette smoking, father's history of hypertension, and body mass index accounted for 23% of the variance for whites. Body mass index, father's history of hypertension, and physical activity accounted for 42% of the variance in DBP for blacks. Oral contraceptive use accounted for 11% of the variance for white females.

513. RICHARDS, J. A. The effects of augmented attentional focus on the performance with practice of a closed perceptual motor task for individuals who differ in task mastery. Ed.D. in Physical Education, 1984, 90 p. (P. A. Beitel)

64 male volunteers were assigned to either the beginning or advanced task mastery group (n = 32) based on bowling averages (≤130, ≥150, respectively). Each S in the task mastery groups was randomly assigned to 1 or 4 augmented focus of attention conditions, i.e., focus on: (a) environmental results of the movement that was performed (KR); (b) the movement that was performed (KP); (c) self-via presence of VTR camera and monitor (VTR); or (d) nothing by experimental manipulation (control). The pinfall of 30 balls rolled at a full ten-pin set-up and distance from target scores were averaged and grouped into 6 blocks of 5 trials each. For both levels of task mastery, an a priori test of planned comparisons and an ANOVA for the split plot factorial (4.6) were used to analyze the data. Results indicated that: (a) the bowling accuracy of beginning bowlers who received an augmented attentional focus to KR was sig better ($p<.004$) than that of the beginning control group with no other group diff; and (b) the distance from target scores of the advanced bowlers who received an augmented attentional focus to KP were more accurate ($p = .038$) than those of the KR focus or advanced control group. In conclusion, the results of the study partially supported the theoretical projections of Gentile (1972) and Fleishman and Rich (1963).

514. WINTER, T. P. Selective attention of hyperactive, hyperactive-learning disabled, learning disabled, and nondisabled young males: a signal detection analysis. Ph.D. in Physical Education, 1984, 120 p. (C. A. Wrisberg)

60 males (ages 8-10 yrs) were each given 224 trials involving the tachistoscopic presentation of a visual stimulus (duration = 0.1 sec) consisting of a group of red dots which formed the body of a triangle. Additional dots located along the periphery of, or embedded within, the triangular pattern functioned as cue(s). On half of the trials Ss performed under self-paced conditions in which they controlled the rate of stimulus presentation and responded by rapidly depressing 1 of 2 telegraph keys (designated "yes" if the S thought a cue was present and "no" if not). On the other half of the trials performance was forced-paced (i.e., 1 stimulus presented every 2.1 sec). To assess the quality of signal detection performance, ANOVA procedures were performed on each of several dependent measures (percentage of hits and false alarms, d prime, beta, RT and MT). Taken together, the results suggested that hyperactivity alone may not impair the selective attention performance of young males but that the presence of learning disabilities, particularly when accompanied by hyperactivity, may magnify the severity of selective attention deficits.

515. WOOD, D. K. The effect of two free weight training programs on selected closed motor skills. Ed.D. in Physical Education, 1984, 103 p. (P. A. Beitel)

The purpose of this study was to determine which of 2 types of strength training programs more positively affected the performances of untrained female Ss on selected closed motor skills with motor skill components of speed, strength, coordination, and agility. 2 exp groups trained for 8 wks executing explosive (n=10) and non-explosive (n=9) training tasks with free weights. The groups were pretested and posttested on the: (a) vertical jump, (b) standing broad jump, (c) standing triple jump, (d) 20 yd dash, and (e) the obstacle run. The Mann-Whitney U test indicated that the explosive method of training produced sig better performances on the change scores of the standing broad jump (p = .002) and less sig results on the change scores on the vertical jump (p = .08). It was concluded that explosive weight training exercises with free weights improved performance in the jumping skills. Improvements could be attributed to the positive transfer of learning from performance of the explosive weight training tasks to the jumping tasks due to the nature of the similarity of the movement demands between the tasks.

UNIVERSITY OF TEXAS (D. H. Hardin)
EL PASO, TEXAS

516. VAHLSTROM, T. D. The effects of sprint training programs on either a flat surface or on an inclined surface, upon running speed in the forty meter sprint. M.S. in Health and Physical Education, 1985, 34 p. (D. H. Hardin)

Ss were male students at the University of TX at El Paso. All were enrolled in conditioning classes and were considered to be in moderate physical condition. Ss were placed in 2 groups: Group I (n=15) ran on a flat surface and Group II (n=17) ran down a 3% inclined surface. Each group completed a training program consisting of a series of 50 m sprints starting wth 8 repetitions and finishing with 12 repetitions. The training sessions were conducted twice per wk for a period of 5 wks. Each S was timed for 3 trials in a pre-test and post-test. M times were computed for each S's 3 trials. Group M times (Group I - Pre-test, 6.05s; Post-test, 6.03s; Group II - Pre-test, 6.24s; Post-test, 6.19s) were calculated and results determined by comparing t scores established from the data to the critical t value at p<.05. Results of the study demonstrated no statistically sig diff in the effects of training on an inclined surface and flat track in developing sprinting speed. The results were further verified with the use of ANCOVA.

517. WHITE, S. The effect of positive reinforcement, the absence of reinforcement, and a combination of

positive and the absence of reinforcement upon performance of a selected motor task. M.S. in Health and Physical Education, 1985, 41 p. (D. H. Hardin)

Ss selected for this study were 60 10-12 yr old children enrolled in the National Youth Sports Program sponsored by the University of TX at El Paso. The Ss were randomly assigned into 3 groups. All Ss completed a motor task which consisted of throwing 10 velcro balls at a foam target; scores were recorded for each of the throws. Ss in the positive reinforcement group were given a bar of candy after each trial, and received a total of ten bars of candy. The absence of reinforcement group performed the motor task, and were not given bars of candy on any trial. The combination of positive and the absence of reinforcement group were given candy bars for scoring in the inner 2 rings of the target, and nothing for the outer 3 rings. M scores were computed for each of the 3 group, and results determined from the data, to the critical t value at $p<.05$. Results of the study indicated no statistically sig diff on motor task performance when the application of positive reinforcement, the absence of reinforcement, and a combination of positive and the absence of reinforcement was presented to 10-12 yr old children. The results were further verified with the use of Tukey's Method for equal N's and ANOVA.

UNIVERSITY OF WISCONSIN (N. K. Butts)
LA CROSSE, WISCONSIN

518. ARTHUR, P. R. The task survey on cardiopulmonary physical therapy competencies. M.S. in Adult Fitness/Cardiac Rehabilitation, 143 p. (P. K. Wilson)

Due to the lack of empirical data reflecting current practices and attitudes of cardiopulmonary physical therapists (PT), a national survey was undertaken. Task statements developed from cardiopulmonary PT patient care competency statements were incorporated into rating scales for the purpose of identifying frequency, level of competence required, and how essential each task performance was. Developed questionnaires were mailed to 528 active APTA cardiopulmonary section members. Analysis of the 209 (40%) returned questionnaires revealed that a consensus does exist on the essential aspects of the practice. The data on the frequency of task performances were helpful in documenting the relative responsibilities of the cardiopulmonary PT. The results suggested PT's were providing cardiopulmonary services for all the common cardiopulmonary disorders throughout the nation. Ratings on the level of competence required for task performances and data collected on the extra endeavors utilized by PT's to gain their present level of cardiopulmonary knowledge and skills indicated that the practice is an advanced level competency and that advanced certification may be required. The study also identified methods utilized by PT's to gain additional cardiopulmonary competence. Recommendations on how the study's results can be utilized to assure adequate supplies of the highest standards of cardiopulmonary PT services were identified.

519. BARRY, A. M. A program evaluation of the La Crosse Exercise Program Cardiac Rehabilitation Unit. M.S. in Adult Fitness-Cardiac Rehabilitation, 1984. (L. K. Hall)

This study evaluated participant perception of the La Crosse Exercise Program (LEP) Cardiac Rehabilitation Unit (CRU). An evaluation questionnaire was designed to examine participant's perceptions towards the following specific characteristics of the program: 1) personal attention upon entry into the program, 2) quality of medical related care, 3) coordination and personal care, 4) patient education, and 5) personal feedback. The questionnaire was distributed to 54 participants of the CRU. 37 Ss responded of which 15 were compliers, 22 were noncompliers; 19 were Phase III, and 18 were Phase IV participants of the CRU. Statistical analysis of the data were done with percentages, Ms, X^2, and discriminant analysis. Questionnaire data showed no sig relationship (p>.05) between the M response ratings of each parameter of the questionnaire and the compliers and noncompliers of the Phase II and IV participants of the CRU. In general, the program was rated as "good" on a 5 point Likert scale with the following modifiers: excellent, good, fair, poor, and very poor. Specific weaknesses of the LEP CRU were identified with the most evident being patient dissatisfaction with monthly performance reports and program costs.

520. BOEGLIN, E. R. JR. Primitive reflex elicitation in trainable mentally retarded individuals during physical skill performance and a specific physical therapy protocol. M.S. in Special Education, 1984, 102 p. (K. Wood)

24 TMR Ss (18 male, 6 female) volunteered to participate in performing selected PE motor skills and a specific physical therapy (PT) protocol. Ss were videotaped during their participation and the videotapes were later graded for reflex elicitation. Each performed the following PE skills: overhand throw, stationary kick, forward roll, and log roll. The specific PT protocol included: asymmetrical tonic neck reflex 1 (ATNR1), symmetrical tonic neck reflex (STNR), head righting acting on the body reflex (HOB), and asymmetrical tonic neck reflex 2 (ATNR2). The raw scores obtained from the PE skills and the PT protocol were analyzed utilizing a Sign Test. Likewise, a Sign Test was employed comparing the diff in reflex behavior elicited by a PE skill and its corresponding PT protocol. No sig diff (p>.05) was found concerning the elicitation of reflexes during the performance of PE skills. Although reflex elicitation was observed in over 50% of the Ss during the ATNR2 and in over 33% during the STNR passive down protocol, a non sig diff (p>.05) was attained for the PT protocol. When each PE skill was compared with its corresponding PT protocol, a nonsig diff (p>.05) was also attained. It was concluded

that the TMR individuals in this study did not elicit specific primitive reflexes in selected PE skills or during a PT protocol. Additionally, it was determined that no diff existed in the elicitation of primitive reflexes during the performance of PE skills and the corresponding PT protocol, although more reflexes were observed during the PT protocol than from the PE skills.

521. BONK, M. L. A study of variations of goggle color on depth perception underwater. M.S. in Physical Education-Human Performance, 1984, 50 p. (A. J. Winter)

Depth perception of Ss was measured while wearing various colors of goggles in air and underwater. Ss were 11 men and 15 women (N=26) enrolled in intermediate level swim courses who volunteered for this study. Ss' depth perception measures were taken with a Modified Howard-Dolman Apparatus. Ss were tested in both media and goggle color variations of clear, red, blue and smoke. An ANOVA with repeated measures on both factors was used for data analysis. Results indicated no sig diff $(p>.05)$ of Ss depth perception measures due to the variations of goggle color. Ss depth acuity was sig $(p<.05)$ lower in the water than in the air. There were no sig $(p>.05)$ interaction effects between color and media on Ss depth perception measures.

522. BREWSTER, E. H. The effect of sodium bicarbonate on lactate levels during short-term supramaximal exercise. M.S. in Adult Fitness/Cardiac Rehabilitation, 1984, 68 p. (N. K. Butts)

Aerobically trained females (n=15) performed 4 supramax exercise bouts 1 hr after orally ingesting either 200 mg/kg body wt $NaHCO_3$ or 5.0 g NaCl, to determine the effects of $NaHCO_3$ on blood lactate concentration. Using a double blind protocol, each S performed 4 randomized conditions: 1) NaCl - 30 sec, 2) NaCl - time to exhaustion (TTE), 3) $NaHCO_3$ - 30 sec, 4) $NaHCO_3$ - TTE. The Wingate Anaerobic Test was used to elicit supramax exercise. 4 ml samples of blood were drawn from the antecubital vein 30 min post-ingestion and 5 min post-exercise in each of the 4 conditions. Lactic acid (LA) was determined using the enzymatic method described by Sigma Chemical Co. (1977). Pedal revolutions were recorded for determination of total work (TW). Statistical analysis of the data revealed no sig (p>.05) diff in TW, post-ingestion LA, $NaHCO_3$ (7 mg%), NaCl (6 mg%), and TTE-LA, $NaHCO_3$ (88 mg%), NaCl (81 mg%). However, in the 30 sec trial, LA levels were sig (p<.05) higher with $NaHCO_3$ (75 mg%), than NaCl (62 mg%). This increased LA with $NaHCO_3$ was attributed to improved efflux of LA across the sarcolemma. The explanation for no sig diff in TTE-LA was unclear, but might have been due to an error in test protocol. Based on these results, it appears that while $NaHCO_3$ may improve efflux of LA, it does not improve performance in short-term supramax exercise.

523. BRYANT, S. E. Energy cost, heart rate response and perceived exertion of obese and non-obese untrained females during four speeds of treadmill walking. M.S. in Adult Fitness/Cardiac Rehabilitation, 1984, 111 p. (K. Wood)

Untrained female volunteers (N=24) were divided into lean (≤24.8%) and obese (≥30.8%) groups as determined by hydrostatic weighing. Ss walked on a TM at 4 speeds: 2.5 mph, 3.0 mph, 3.5 mph, and a chosen high speed (4.0 mph or 4.5 mph). The obese group expended sig more calories than the lean group (p<.05) at all speeds except 4.0 mph. Caloric cost increased linearly with speed from 2.5 mph to 3.5 mph and curvilinearly after 3.5 mph. HRs were higher in the obese group at all speeds and were sig (p<.05) at 3.0 mph, 3.5 mph and 4.5 mph. Intensity needed for a cardiovascular training effect (+65% max HR) was attained at 3.0 mph by the obese group and at 4.0 mph by the lean group. a higher RPE was reported at all speeds by the obese group than the lean group, but was sig (p<.05) only at 2.5 mph. HR and ROE were highly correlated (r = 0.834) only in the lean group during high intensity work. It was concluded that walking at moderate speeds was an effective form of exercise for caloric expenditure and cardiovascular endurance training for obese individuals, but that higher speeds of walking were required to achieve the same benefits by lean individuals. Therefore, walking was recommended for both weight loss and improvement of cardiovascular fitness in obese individuals, while more strenuous forms of exercise were recommended for lean individuals. Exercise prescription by target HR rather than RPE was recommended for both groups.

524. CALLAHAN, C. M. Ratings of perceived exertion in type A and type B females. M.S. in Adult Fitness/ Cardiac Rehabilitation, 1984, 83 p. (N. K. Butts)

This study was designed to determine if any diff existed in the perception of exertion between Type A and Type B females. Of the 316 male and female college students completing the JAS - Form T, 17% were identified as Type A. A total of 38 females (Type A = 17, Type B = 21) completed a max VO2 test and a series of submax tests. A treadmill test involving a walking protocol was done to determine each S's max VO2. A regression equation was then used to determine workloads of 50%, 65%, and 80% for each S. Ss underwent a submax test involving these 3 workloads while VO2, HR, and RPE's utilizing the Borg Perceived Exertion scale were determined. Independent t tests showed no sig $(p>.05)$ diff in age, ht, wt, max VO2, max VE, or max HR between groups. For the submax exercise, both groups worked at equal intensities for all 3 workloads, since VO2's and HR's showed no sig $(p>.05)$ diff using a 2-way ANOVA. RPE's at all 3 workloads were analyzed utilizing a 2-way ANOVA, and were not sig $(p>.05)$ diff between groups. It was concluded that there were no diff in the perception of exertion between Type A and Type B females working at similar intensities.

525. CROWELL, D. L. Influence of sodium bicarbonate upon the performance of short-duration maximal

exercise trained females. M.S. in Adult Fitness/ Cardiac Rehabilitation, 1984, 86 p. (N. K. Butts)

Trained college-aged females (n=15) were studied under alkalotic ($NaHCO_3$ ingestion) and placebo (NaCl ingestion) conditions to determine the effect of $NaHCO_3$ on power output for 30 and 60 sec of all-out cycling. Time to exhaustion was also measured. $NaHCO_3$ ingestion had no sig ($p>.05$) effect on power output for 30 (1245.6 vs 1225.5 kgm/30sec) and 60 sec (1972.4 vs 1925.9 kgm/60sec) of max exercise and time to exhaustion (107.8 vs 82.7 sec). These results suggested that the alteration in blood acid-base balance, $NaHCO_3$ ingestion, had little influence on muscle pH. Thus, it may be that the pH of the muscle was not the decisive limiting factor in max exercise of 30 or 60 sec duration. It was concluded tht the ingestion of $NaHCO_3$ prior to max exercise of 30 or 60 sec duration had no ergogenic benefit in trained females.

526. DAMKEN, M. A. The energy cost of simulated rowing by college females. M.S. in Adult Fitness/Cardiac Rehabilitation, 1984, 68 p. (L. K. Hall)

This study determined the energy cost of simulated rowing by college females (n=20). 3 selected workloads were utilized on the Dyna Row-100 simulated rowing machine. A 4 min discontinuous protocol with 4 min rest periods was used. M and SD of VO2 at each workload were calculated for each S in ml/kg/min. A single M and SD were computed for the group and converted to MET values. The MET values reflected a gradual, progressive increase in VO2 with increasing workload. An approximate 1 MET level increase was noted with each progressive increase in workload. It was concluded that the progressive increase in MET levels as demonstrated by the actual MET values was appropriate for a testing and training protocol for female Ss utilizing the Dyna Row-100 simulated rowing machine.

527. DEVINE, M. P. The effects of KR delay and post-KR

delay on a modified free throw test. M.S. in Physical Education-General, 1984, 53 p. (M. I. McLellan)

The Ss were 72 male PE majors from the University of WI-La Crosse. The Ss were randomly assigned to 1 of 6 treatment groups. The testing consisted of shooting 15 free throws wearing a blindfold and headphones. The last 10 free throw scores were utilized for data analysis. A 2-way ANOVA with 2 levels on the post-KR delay factor, and 3 levels on the KR delay factor was used for statistical purposes. Results indicated no sig diff (p>.05) in free throw scores as a result of varying the KR delay interval from 5 to 15 sec, and varying the post-KR delay interval from 5 to 10 sec.

528. DUDLEY, M. S. Social support as a factor in stress levels of Wisconsin student nurse anesthetists: An explanatory study. M.S. in Health Education, 1984, 62 p. (G. Gilmore)

This study measured social support levels and stress indices in WI student nurse anesthetists in order to correlate stress and social support levels. Student nurse anesthetists (n=33) in 4 WI schools of nurse anesthesia completed the State/Trait Anxiety Index (STAI) and the Norback Social Support Questionnaire. 2 major null hypotheses were tested. The first correlated state anxiety stress and social support, and the second correlated trait anxiety stress and social support. 8 sub-hypotheses correlated state/trait anxiety with no. of persons, duration, frequency of contact, and presence of loss in social support networks. No sig (p>.05) correlations were found after analyses by the Spearman Rank r. The results of this study stand in contrast to several other studies addressing social support and stress, however, variance in study designs and instrumentation make direct comparison difficult. Recommendations included further research with a larger sample size and refined social support analyses of the subgroups with high STAI scores.

529. GERMAN, T. M. The relationship of absolute and relative power to strength and speed. M.S. in Physical Education - Human Performance, 1984, 42 p. (A. Freeman)

Members of the varsity track team were filmed performing a vertical jump. Both absolute power (hp) and relative power (ft) were calculated. These results were correlated with strength measured during a MAX leg press and speed measured on a modified bicycle ergometer. Results indicated a sig ($p<.05$) correlation between absolute power and strength and speed measures. There also was a sig ($p<.05$) relationship between relative power and speed.

530. LARSON, T. P. The effects of training on TC, HDL's and the TC/HDL ratio in intercollegiate female cross-country runners. M.S. in Adult Fitness - Cardiac Rehabilitation, 1984, 83 p. (N. K. Butts)

This study was designed to determine if training would have an effect upon the concentrations of total cholesterol (TC), high-density lipoprotein (HDL), and the total cholesterol/high density lipoprotein ratio (TC/HDL) in intercollegiate female cross-country runners. Body composition, max VO2, and blood constituents were determined on 29 females (M = 19.3 yrs) pre and post-training. The runners trained 7 days/wk, at an intensity of approximately 70-80% of max. A dependent t-test was used for analysis between all pre and post-training measures. The Ss' diets were evaluated using a 3 way ANOVA with a Scheffe' post hoc. Lean and total body wt, max VO2, and max treadmill time sig ($p<.05$) increased while % body fat and diet experienced no sig ($p>.05$) change over the season. TC, HDL, and the TC/HDL ratio were not sig ($p>.05$) altered in response to training. It was concluded that over the course of the cross-country season, fitness levels sig increased but no sig changes occurred in the TC, HDL's and the TC/HDL ratio of the intercollegiate female cross-country runners.

531. KASSER, S. L. A comparison of cardiovascular fitness instruments for trainable mentally retarded adolescents. M.S. in Special Physical Education, 1984, 96 p. (K. Wood)

9 male and 5 female TMS Ss volunteered to perform a max VO2 treadmill test and timed distance runs of 300 and 600 yds. M performance times of 91.1 secs in the 300 and 269.0 secs in the 600 yd run-walks were obtained. A M max VO2 value of 30.6 ml/kg/min was also found. Comparisons of max performances between assessments as well as physiological parameters (ht, wt, % fat, resting HR) to the C-V measurements were made. A Pearson Product Moment r was employed to compare instruments and specific variables to those instruments. A r value of -.25 and -.49 resulted between max VO2 (ml/kg/min) and performance in the 300 and 600 yd run-walks, respectively. No sig relationship (p>.05) was found among the 3 C-V assessments and none of the variables measured were sig related (p<.05) to performance in any of the tests. An ANOVA showed no sig diff (p>.05) in M values of resting HR or max HR between tests. It was concluded that performance in distance runs of 300 and 600 yds are not valid measures of max aerobic capacity of the TMR adolescents assessed within this study.

532. KLAPPERICH, A. J. The effects of training on TC, HDL and TC/HDL ratio in male intercollegiate cross-country runners. M.S. in Adult Fitness/Cardiac Rehabilitation, 1984, 89 p. (N. K. Butts)

This study determined the effects a season of cross-country training had on body composition, max VO2, total cholesterol (TC), high-density lipoprotein (HDL) and the TC/HDL ratio of 43 runners (M = 19.8 yrs) from the UW - La Crosse cross-country team. RV was determined by O2 dilution technique and % body fat was ascertained by hydrostatic weighing. There was no sig (p>.01) diff in wt, lean body weight (LBW) or % body fat from pre- to post season testing. Max VO2 was measured during a treadmill (TM) running using the Beckman Metabolic Measurement Cart. No sig (p>.01) diff was found in max HR, TM time and max V_E. There was a sig (p<.01) diff in max VO2 measured in ml/kg/min and L/min and respiration exchange ratio (RER). Dietary intakes of meats dairy products, fats, eggs and alcohol were analyzed using ANOVA with repeated measures at 3 times throughout the season. No sig (p>.01) diff were found in any of these variables. Blood variables were analyzed using the Data Medical procedure. No sig (p>.01) diff were found in TC, HDL or TC/HDL ratio after the season of cross-country running. It was concluded that a season of cross-country running did sig increase max VO2, but did not sig change body composition, dietary intakes, TC, HDL's or TC/HDL ratio.

533. MICKSCHL, W. J. An electromyographic analysis of some of the muscles involved in the performance of the bench press exercise. M.S. in Human Performance, 1984, 60 p. (K. French)

This study investigated the effects of a wide medium, and narrow grip width on the muscle activity produced by the sternal and clavicular heads of the pectoralis major, the anterior deltoid, and the medial head of the triceps brachii during the performance of the bench press exercise. The 28 Ss involved in the study were trained and experienced in the performance of the bench perss exercise. Bipolar surface electrodes were used to detect max and 85% max myoelectrical activity from the muscle bellies of the 4 muscle studied, during eccentric and concentric contractions. A 2-way ANOVA with repeated measures revealed sig diff (p<.05) between the ratios of EMG activity produced by the 4 muscles when using a wide, medium, and narrow grip width position. A Friedman ANOVA by ranks revealed sig diff between the sums of the recruitment order ranks (p<.01) and (p<.001) for the wide, medium, and narrow grip widths. The results of this study provided evidence that the grip width position used during the performance of the bench press affects the amplitude and frequency of the EMG muscle activity, the pattern of muscle recruitment, and the degree of involvement for each muscle analyzed. The EMG activity produced by the muscle involved in the bench press exercise indicates tht one grip width position might be more advantageous for developing muscle activity in the muscles studied. The results of this study may be applied to help improve the performance and understanding of the function of the muscles involved in the bench press exercise.

534. MORANT, M. L. A survey of therepeutic horseback riding programs. M.S. in Special Physical Education, 1984, 57 p. (A. Freeman)

The purpose of this descriptive study was to explore operational, procedural, and managerial techniques utilized in a selected group of existing therapeutic horseback riding programs. Only programs listed in the North American Riding for the Handicapped Association Inc. 1983-84 Annual Report and Journal were used. From a total of 230 programs listed, 30 were randomly selected. Questionnaires were mailed to directors of these programs to obtain the information needed. A 100% return rate from the 27 currently operating programs was achieved. The median number of students per program was 210 with a M of 76.4. Mental retardation and cerebral palsy comprised the prevalent handicapping conditions serviced. More than half (59.3%) of the programs surveyed did not have a "certified" riding instructor but an equestrian instructor taught the lessons. Quarter horses and mixed breeds with an average age of 12 yrs were utilized most. Findings from 2 on-site visits were consistent with those obtained from the survey.

535. MORSCH, P. A. The predictive validity of a nine minute run to peak VO2 in children aged 11-14. M.S. in Human Performance, 1984, 72 p. (N. K. Butts)

13 boys and 12 girls were assessed for peak VO2 and the ditance covered in a 9 min run (yds). Wt (kg), and age were

also examined. Individual data for the boys and girls were substituted into predictive equations to predict peak VO2 developed by Baldwin (1983) and Kreun (1984), respectively. A dependent t-test, r and % error were the statistical treatments utilized to determine validity. 4 equations were found to be valid due to the nonsig diff (p>0.05) between the actual and predicited peak VO2 (L/min and ml/kg/min). Baldwin's (1983) equation that utilized wt (kg) and the 9 min run (yds) to predict peak VO2 (ml/kg/min) in boys resulted in an r of 0.86 and a % error of 1.46. Two other equations (Baldwin, 1983) that predicted peak VO2 (L/min) were also valid, resulting in an r of 0.98. Each equation utilized the 9 mi run (yds) and wt (kg), with ht (cm) being added to the second equation. Validity was shown for only one equation developed by Kreun (1984) for girls. This equation utilized the 9 min run (tds) to predict peak VO2 (L/min) and resulted in an r of 0.53.

536. MOURI, I. Comparison between United States and Japan in undergraduate preparation of adapted physical education teachers. M.S. in Special Education, 1984, 71 p. (L. A. Goodwin)

This study investigated the extent of coursework and practicum experience in Adapted Physical Education in both the U.S. and Japan. 31 of 39 questionnaires from institutions of higher education in the U.S. offering a concentration or minor in Adapted PE were obtained (80%). 18 of 23 Japanese institutions of higher education providing teacher preparation in PE (78%) were studied. Results showed U.S. respondents offered course(s) in Adapted PE and 28 of 31 schools (90%) offered practicum experience with either associated theory course(s) or independent practicum course(s). The no. of available course(s) and content of practicum experience(s) in this area varied greatly from school to school. In Japan, only 5 of 18 institutions (27%) offered a course in Adapted PE and only 2 institutions (11%) provided practicum experience. Results of the investigation indicated that Japan possessed a rehabilitative or medical approach toward the handicapped as opposed to the educational approach of the U.S. It was concluded that Japan needs to develop more appropriate professional preparation programs in Adapted PE at both the undergraduate and graduate levels.

537. MUELLER, C. L. *An analysis of the overhead volley in volleyball.* M.S. in Physical Education - Human Performance, 1984, 63 p. (K. French)

Techniques of cinematography were used to analyze selected variables of the overhead volley in volleyball to determine their effect upon performance. Females (n=16) were filmed at 100 fps while performing the skill in a semi-controlled environment. Variables observed were contact time, flexion/extension of the right knee and trunk, ball velocity, and displacement of the ball. A descriptive analysis was given for each variable as related to the literature presented. Findings reported from this study indicated a max contact time for effective absorption of force, the action of the legs served to lower the total body center of gravity prior to contact, and that the ball was contacted at a distance away from the body, and moved closer to the body during contact. These findings supported descriptions present in the literature concerning the action of the legs, ball contact, and ball velocity. Each of the variables were a necessary component in the overall performance of the overhead volley.

538. PRINCE, K. A. *The prevalence of cesarean sections in female runners and related birth weight and Apgar scores.* M.S. in Adult Fitness/Cardiac Rehabilitation, 1984, 70 p. (L. K. Hall)

This study looked at females who ran during pregnancy and its effects on the type of delivery, infant birth wt, as well as Apgar scores at 1 and 5 min (n=40). Ss were placed into 1 of 3 categories determined by mileage during pregnancy. Ss were also categorized by age they had begun running, maternal age at conception, and the trimester they discontinued running. M and SD were calculated in each mileage group for age at conception, pre-pregnancy wt, wt gain during pregnancy, infant birth wt, infant gestational age, length of labor, and Apgar scores at 1 and 5 min. ANOVA was run to analyze the mileage grouping data. There was no sig diff (p>.05) between mileage groups in any of the parameters. The infant birth wt and Apgar scores at 1 and 5 min were within normal limits. Females in the study had a higher incidence of cesarean sections at a rate of 22.5% over the national rate of 15%.

539. RELF, C. L. Family centered cardiac rehabilitation: a comparison study between patient compliance and spouse's attitude towards cardiac rehabilitation. M.S. in Adult Fitness - Cardiac Rehabilitation, 1984, 86 p. (L. K. Hall)

This study examined the compliance rate of 32 Phase II/IV cardiac rehabilitation patients as compared to the attitudes and participation of their spouses. All Ss completed Phase I and Phase II at La Crosse Lutheran Hospital/Gunderson Clinic. Both patient and spouse completed their own questionnaire with the following results: 53% of the Ss complied with exercise, reporting 41% spouse participation and 89% spouse support; 91% complied with diet, reporting 90% spouse participation and 83% spouse support; 75% stopped smoking with 77% spouse participation and 100% spouse support; 84% complied with weight control, reporting 70% spouse participation and 74% spouse support; 79% decreased stress with 89% spouse participation and 74% spouse support. According to the results of this study, the greater the spouse participation and support, the greater the chance for patient compliance.

540. TAYLOR, S. J. An evaluation of the exercise training heart rate prescription and pulse taking accuracy of phase III and IV cardiac rehabilitation participants. M.S. in Adult

Fitness/Cardiac Rehabilitation, 1984, 87 p.
(L. K. Hall/ G. Porter)

After a routine graded exercise test (GXT), 13 Ss underwent ambulatory monitoring during 2 typical training sessions in order to obtain actual training HRs. Exercise prescription (EX RX) evaluation was performed by comparing the peak and M actual training HR's to a peak HR GXT. A dependent t-test found no sig (p>.01) between the peak HRs therefore, the Ss were exercising at HRs similar to peak HRs GXT. One contributing factor was the large variance of HRs. 4 Ss were found training at HRs above their peak HR GXT. 11 Ss exceeded their EX RX sometime during the training sessions and 6 of those consistently had a M actual HR their EX RX for both sessions. No sig (p>.01) was found during any activities except cool down. The Ss were accurate pulse counters and their palpated HRs were a reflection of the actual training HRs. Most of the Ss rated the training session at the same or lower RPE values when compared to the GXT, although they were exercising at higher HRs.

541. THOMPSON, N. N. A reliability analysis of the Cybex II dynamometer and trunk stabilization system. M.S. in Adult Fitness/Cardiac Rehabilitation, 1984, 129 p. (S. Price)

Measurements of isokinetic parameters during trunk flexion (FL) and extension (EX) were collected for 44 untrained Ss (23 females, 21 males) using a Cybex II dynamometer and trunk stabilization system interfaced to a Cybex Data Reduction Computer. On each of 3 days, Ss performed 2 sets (trials) of max EX/FL contractions. One trial consisted of 4 repetitions at 30, 60, 90 and 120 deg/sec. A 2-way ANOVA was used to calculate reliability coefficients (R's) for all categories of peak torque (PT) and total work (WK). The M of all R's was .926 (range = .760-.986). By combining individual R's into various categories, the following values were obtained: EX (R = .907), FL (R = .944), WK (R = .918), PT (R = .934), male Ss (R = .919), female Ss (R = .933), 120 deg/sec (R = .909), 30 deg/sec (R = .945). The rate of FL PT to EX PT increased with increasing speed of contraction for all Ss. The results suggest that the present measurement schedule produced an acceptable level of reliability for isokinetic trunk measurements on the Cybex system. Therefore additional normative data can be reliably collected to provide clinically useful guidelines for testing and rehabilitation.

542. WALENTINY, C. T. Relationships of the psychophysiological responses to MET levels for prescriptive purposes while rowing in college-age students. M.S. in Adult Fitness/Cardiac Rehabilitation, 1984, 82 p. (L. K. Hall)

To determine the relationships between established MET levels and HR, BP, and RPE, 20 male Ss and 20 female Ss exercised at 3 selected workloads on the Dyna-Row 100 rowing machine. A discontinuous protocol was used with 4 min per workload at 3 selected workloads on the Dyna-Row 100 rowing machine. A discontinuous protocol was used with 4 min per workload and 4 min rest periods between workloads. M and SD of HR, BP, and RPE were calculated for each S at each workload. Correlations were made of HR, BP, and RPE with METS, and BP and RPE with HR. The results revealed poor correlations in every relationship with the exception of a fair to good relationship between HR and METs in men (0.70, 0.73, and 0.77). It was concluded that in this type of exercise HR, BP, and RPE were not reliable or safe substitutes for METS.

543. WITHERSPOON, D. A comparison of body density and percent body fat as computed using four different lung volumes in the hydrostatic weighing technique. M.S. in Adult Fitness/Cardiac Rehabilitation, 1984. (L. K. Hall)

This study compared body density (BD) and percent body fat (% BF) arrived at by using 4 diff lung volumes in the hydrostatic weighing (HW) procedure. The 4 lung volumes were residual volume as measured in air (RV-dry), residual volume as measured immersed in water (RV-wet), functional residual capacity as measured immersed (FRC), and total lung capacity as measured immersed (TLC). The closed circuit O2 dilution technique was used to measure all lung volumes. A questionnaire completed by the Ss was used to assess the comfort of each method. Ss included 14 male and 16 female students of the University of WI - La Crosse, ages 19-34. Two BD and % BF were calculated for Ss by applying lung volume measurements at RV-dry, RV-wet, FRC, and TLC. A M of the 2 trials was computed for lung volume, BD, and % BF, and were used in statistical comparison of the 4 techniques. An ANOVA with repeated measures followed by a Scheffe' Post Hoc Test was used to analyze BD and %BF data and a t-test was used to compare RV-dry and RV-wet lung volumes. There was no sig ($p>.05$) diff between HW determination of BD and %BF using RV-dry, RV-wet, and FRC. There was a sig ($p<.05$) increase in HW determination of BD and % BF using TLC compared to RV-dry, RV-wet, and FRC. FRC was deemed most comfortable by Ss. It was concluded that with the apparatus and methods described in this study, RV-dry, RV-wet, and FRC could be used interchangeably in BD and % BF determinations by HW. The TLC method cannot be used interchangeably with the other 3 methods in BD and % BF determinations by HW.

UNIVERSITY OF WISCONSIN (W. P. Morgan)
MADISON, WISCONSIN

544. CARLIN, J. I. The effects of prolonged exercise and the ingestion of alanine and glucose during recovery on plasma carnitine and ketosis. Ph.D. in Physical Education, 1984, 105 p. (W. G. Reddan)

The purpose of this investigation was to examine the effects of prolonged exercise, recovery and subsequent glucose or alanine ingestion upon the metabolism of hepatic acetyl CoA as reflected through variations in plasma carnitine and betahydroxybutyrate. Four, fasted adult males exercised 1.5 hrs followed by ingestion of either alanine or glucose 2 hrs into recovery. Blood was analyzed at rest, 1.5 hrs of exercise, at 2 hrs recovery and every 0.5 hrs after ingestion for plasma free, esterified, and long chain carnitine, betahydroxybutyrate and free fatty acid. All plasma values were similar in exercise and at 2 hrs recovery. Free carnitine was increased with alanine above that of glucose even though free fatty acid was maintained after alanine while falling below rest after glucose. In addition, the potential role of physical training upon hepatic acetyl CoA metabolism reflected through variations in plasma carnitine and betahydroxybutyrate, was studied in 6 trained and 7 untrained subjects over 1.5 hrs of exercise and recovery. Although free fatty acid and betahydroxybutyrate increased abruptly in recovery in both groups, the elevation was greater in the untrained. These two studies are consistent with the hypothesis that both an oxalacetate precursor (i.e. alanine) and free fatty acid may be important in regulating the level of hepatic acetyl CoA and betahydroxybutyrate production in man.

545. CHIN, M. I. The effects of propranolol on carbohydrate and free fatty acids metabolism during maximal contraction in isolated canine gracilis muscle. Ph.D. in Physical Education, 1985, 201 p. (F. J. Nagle)

The effects of propranolol on carbohydrate and free fatty acids (FFA) metabolism during maximal muscle contraction were studied in 10 dogs on which the gracilis muscle was isolated in situ. After 6 minutes of control muscle contraction, the muscle glycogen level decreased sig ($p<0.01$) from 46.4 at rest to 20.1 umol/g. Arterial FFA and FFA uptake increased sig ($p<0.01$) by 0.19 umol/ml and 6.46 umol/100g/min, respectively. Muscle lactate increased 2.12 at rest to 9.43 mmol/kg ($p<0.01$). Six minutes of muscle contraction during beta blockade resulted in a decrease in muscle glycogen content from 28.8 at rest to 17.8 umol/g (p

0.01), a mean arterial FFA and FFA production - 0.28 umol/ml and 1.59 umol/100g/min, respectively, and muscle lactate concentration (6.67 umol/kg) were observed. These were sig ($p<0.01$) less than that measured in the control exercise condition. No sig change of plasma catecholamines was observed during contraction with and without beta blockade. The findings of this study support the hypothesis that in exercise with beta blockade, FFA mobilization is depressed and an intracellular mechanism associated with contraction facilitates glycogenolysis in supplying substrates.

546. HENKEL, S. A. A description of the moral judgment of physical education teachers. M.S. in Physical Education, 1984, 118 p. (N. Earls)

The moral judgment of physical educators was described for a cognitive-developmental perspective by answering three questions: (a) What types of moral judgment are characteristic of physical educators?; (b) How much variability in moral judgement is there among physical educators?; and (c) How is the variability distributed in relation to selected characteristics of the teachers? Forty-seven physical educators completed (a) the Defining Issues Test, and (b) a demographic questionnaire. Subjects ranked the importance of factors considered in formulating solutions to four socio-moral dilemmas. Test scores indicated the relative importance given to moral judgment Stages 2 through 6. Kruskal-Wallis ANOVAS (a = .05) and planned comparisons were used to examine differences by teaching level, coaching experience, and coaching involvement. Welch-Aspin t tests were used for pair-wise tests of null hypotheses concerning gender (a = .05), formal education (a = .01), and coaching aspirations (a = .05). The sample mean principled score (37.8%) was lower than the normative mean for numerous education-related populations. No differences in mean principled score were sig for any of the planned analyses. A post hoc analysis revealed a sig diff between coaching aspiration subgroups for Stage 4 judgment. Recommendations for further research included (a) comparing the moral judgment and actions of physical educators, and (b) developing an assessment instrument using physical education specific dilemmas.

547. MESSER, D. L. Variations in strength and power in the quadriceps femoris muscle of the renal transplant patient. M.S. in Physical Education, 1984, 73 p. (F. J. Nagle)

30 males between the ages of 18 and 45 yrs, with a diagnosis of chronic renal failure and a kidney transplant, were studied at either 3 days pre-transplant, 6 wks, 3, 6, 9, or 12 mos. post-transplant, with a total of 5 subjects in each group. Measurements of physical characteristics, cumulative prednisone doses, plasma Branched Chain Keto Acids (BCKA) and isokinetic muscle strength (peak torque and power), of the dominant quadriceps femoris, were taken at the time of testing. There were no sig diff between groups for physical characteristics except cumulative prednisone doses which increased sig ($p<.01$) between the 3 days pre- and 6 weeks post-transplant groups. BCKA's were below normal therapeutic limits pre-transplant and within normal therapeutic limits for all post-transplant groups. Peak torque values at 30 RPM were 33% of normal pre-transplant and showed no sig change in the remaining groups. Power decreased sig ($p<.01$) for pre- to 6 wks post-transplant and remained low in the 3, 6, 9, and 12 month post-transplant groups. Highly sig negative correlations were found between power and cumulative predinisone doses ($r=-.59$) and BCKA's ($r=-.89$). The % of change in power over the six groups correlated highly with prednisone ($r=.59$) and all BCKA's ($r=.83$). The mechanism for the persistent muscle weakness in this population was not identified although, prednisone was suggested as a major contributing factor.

548. OKOCHA, A. E. Glycogen resynthesis following submaximal and supermaximal exhaustive exercise in man. Ph.D. in Physical Education, 1983, 119 p. (F. J. Nagle)

The role of skeletal muscle glycogen synthase (GS) in muscle glycogen resynthesis rates (GRR) was investigated following bouts of exhaustive 1-leg supramaximal (SUP) (115% 1-leg VO2max) and submaximal (SUB) (75% 1-leg VO2max) cycling. The contribution of blood glucose (glc) and blood lactate (lac) to post exercise glycogen repletion was also evaluated. Muscle biopsies were obtained from M. vastus lateralis of 8 males with 1-leg VO2max of at least 30 ml/kg/min. GS activity was determined using the following: activity ratio (AR) (velocity at 1 mM glucose-6-phosphate (G6P)/velocity at 7.2 mM G6P) using 4.4 mM uridine diphosphate glucose (UDPG) at pH 7.8 and fractional velocity (FV) (velocity at 0.1 mM G6P/velocity at 1.0 mM G6P) using Mm UDPG at pH 6.9. During the first 60 min of recovery, there was no diff between GRR (mean ± SE) in SUP (114.8 ± 31 umol glucosyl units/kg wet weight/min) and SUB 168.5 ± 60 umol glucosyl units/kg wet weight/min). The glc levels immediately and 30 min following exercise were higher in SUP (8.89 ± 1.45 and 3.86 ± 0.74 mmol lac/l) than SUB (3.36 ± 0.04 and 1.63 ± 0.21 mmol lac/l). Although GS activity was elevated to a similar extent immediately after each exercises, by 30 and 60 min recovery GS activity was higher in SUB than SUP as measured by AR (0.74 ± 0.05, 0.77 ± 0.01 SUB vs. 0.63 ± 0.06, 0.64 ± 0.01 SUP) and FV (0.92 ± 0.01, 0.94 ± 0.01 SUB vs. 0.88 ± 0.02, 0.88 ± 0.01 SUP) assays. Since both exercise protocols depleted muscle glycogen to the same levels (15.23 ± 3.36 mmol gls units/kg wet weight SUP vs. 13.25 ± 3.73 mmol glc units/kg wet weight SUB), it is concluded that diff in the levels of glc and lac as well as in GS activity did not produce any diff in GRR between SUP and SUB during the first 60 min of recovery.

549. RAGLIN, J. S. Influence of acute exercise and "distraction" therapy on state anxiety and blood pressure in normotensive and hypertensive adult males. M.S. in Physical Education, 1983, 81 p. (W. P. Morgan)

A series of exp was performed in which Ss rested quietly for 40 min in a sound chamber ("distraction" therapy) and performed aerobic exercise under separate conditions. Blood pressure (BP) and state anxiety were assessed prior to and following the conditions. In the first pilot study 15 normotensive Ss were assessed during the 3 hrs following the treatments. Results revealed that state anxiety and BP were reduced following both conditions but sustained reductions in BP only occurred following exercise. The second pilot study involved an attempt to evaluate the contribution a warm shower makes to exercise-associated effects. 15 normotensive Ss had BP and state anxiety assessed prior to and following a 5 min shower (38.5^{o} C). Results revealed that the shower was associated with an insig decrement in BP and a sig reduction in anxiety. The main study involved an evaluation of 15 pharmacologically-controlled hypertensive Ss. Ss showered following both conditions. Results revealed that the BP reduction following distraction was transitory, whereas the exercise reductions were sustained. On the basis of these exp it is concluded that because acute exercise activities varies physiological systems, its effect on BP differs qualitatively from "distraction" therapy which promotes physiological quiescence.

550. TURPIN, B. A. M. The assessment of motor programming and program modification in rapid keypressing tasks. Ph.D. in Physical Education, 1984, 182 p. (G. E. Stelmach)

The purpose of this study ws to understand the underlying characteristics of latency profiles in both motor programming and execution of movement(s) by systematically varying the internal representation and the fingers used. In Exp I, 22 Ss were required to prepare a response from a selection of 2 or 4 choices. Ss were subsequently required to make 1 of 3 changes (a transition) in their prepared responses on 20 or 25% of the trials. In Exp II and III, 18 and 8 Ss respectively, were required to modify 1 of 2 response components in a sequence of 2 keypresses, (Phase condition) on 25% of the trials. In the equiprobable condition Ss were required to specify only one of the two response components. Both latencies displayed prominent probability and phase effects, as predicted. The transition outcomes were not independent of Phase nor the fingers used. Hand transitions were slower than finger-hand transitions for Phase 2 in the 25% condition while no transition effects were found in the equiprobable condition. Generally, sequences or transitions starting with either index finger were faster than those starting with either middle finger. Collectively the findings imply that three distinct motor programming operations existed, and offer support for the simultaneous occurence of programming and execution. The data also suggests that response latencies were not independent of the order or finger context effects.

551. WANG, Y. Personality characteristics of college athletes as measured by the Minnesota Multiphasic Personality Inventory (MMPI). M.S. in Physical Education, 1984, 42 p. (W. P. Morgan)

A retrospective analysis of 87 college athletes and 100 nonathletes was performed in an effort to observe personality diff between athletes and nonathletes, and among various athlete's subgroups. The Minnesota Multiphasic Personality Inventory (MMPI) served as the dependent measure. Stepwise Discriminant Function Analysis revealed that sig diff in personality existed between athletes and nonathletes, and between athletes who graduated and those who did not. No diff, however, was observed between team sport participants and individual sport participants in this investigation. Some of these results are consistent with earlier research, as well as theoretical expectations, but other findings are in disagreement with both theory and previous research. It is concluded that the MMPI is capable of differentiating personality among various group comparisons. It is also recommended that generalizations from this investigation should be made with caution, and further research needs to be completed before any definite conclusions may be made.

552. WOOD, T. M. *A comparison of three multivariate models for estimating test battery reliability.* Ph.D. in Physical Education, 1984, 150 p. (M. J. Safrit)

The sampling variability of three multivariate models for estimating test battery reliability was examined via data simulation procedures under conditions of varying sample size (n = 50, 110, 136, or 250) and distribution shape (normal, skewed, or double exponential). The three models were the canonical reliability model, the maximum generalizability model, and the canonical correlation model. Comparisons among the models were made on the basis of the sampling distributions for each estimator and the properties of consistency, relative efficiency, and bias. While all estimators evidence little bias and were consistent, the coefficient of maximum generalizability revealed the least degree of bias, the smallest error of estimation, and the greatest relative efficiency. The results indicate that skewed or double exponentially distributed data produced estimates with greater bias, greater error of estimation, and more negatively skewed sampling distributions. A minimum rule of thumb for determining sample size when employing the models was given as $n \geq 10(2 \times c) + 50$ where c equals the number of subtests in the test battery. Nowever, when the data are skewed or double exponentially distributed, the sample size should be sig greater than the minimum rule when estimating the canonical reliability and canonical correlation coefficients since the error of estimation under these conditions was unduly high.

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
BLACKSBURG, VIRGINIA (M. L. Driscoll)

553. DRUMMOND, J. P. *A correlational study of leisure participation, leisure attitudes, and leisure*

satisfaction among leisure educators, and a general population group. Ed.D. in Curriculum and Instruction, 1984, 117 p. (M. L. Driscoll & G. A. Hayes)

Survey data were collected from 58 leisure educators, 93 leisure practitioners, and a random sample of 94 alumni from a large southern land-grant university to determine if the years of academic study and available REC amenities associated with the vocation of parks and REC and/or education results in sig individual scores of leisure attitudes and leisure satisfaction. The LAB, LAS, and LSS were used. ANOVA was used with HSD when ANOVA findings were sig at .05. Pearson product-moment correlations were also used. Results demonstrated leisure practioners participate in activity more frequently than the general population. There was no diff in attitude among the groups. Leisure educators and practioners had higher scores on satisfaction than the general population and the general population showed a sig relationship between satisfaction and participation. Sig relationships between attitude and satisfaction were found for all 3 groups. Level of education related negatively with leisure participation for leisure educators.

554. DUNN-SLUYTER, D. M. Self-reported nutritional behaviors of freshmen and sophomore college students at a land grant university in the southeastern United States. Ed.D. in Curriculum and Instruction, 1984, 158 p. (L. J. Weber)

555. GIBSON, C. M. Considerations for exercise prescription of coronary artery diseased patients. M.S. in Physical Education, 1984, 151 p. (W. G. Herbert)

45 patients of a cardiac rehabilitation program were evaluated to determine the physiological effects from

coronary artery disease and/or cardiovascular medication. HR, VO2, VI and R were observed. Perceptual sensations were assessed using RPE. The patients were subdivided into 3 groups MCAD, CAD, and NL. MCAD group had sig lower HR response throughout the test and the CAD group had a sig lower peak HR response when compared to the NL group. It was observed that use of the Karvonen method for exercise prescription is not recommended for the MCAD group but is recommended for the CAD and NL groups. RPE and R methods for exercise prescription were recommended for all 3 groups. VO2 method is not recommended for the MCAD and CAD groups.

556. KNIGHT, L. A. Why women do not participate in intramurals. M.S. in Physical Education, 1984, 75 p. (M. L. Driscoll)

400 females were surveyed to discover their participation tendencies for intramural sports. Frequency distribution, cross tabulations, and X^2 analysis wre used. Results showed 258, or 65% of the women surveyed did not participate in intramurals with the main reason given being a lack of publicity. Concern for academics was the 2nd major reason and seniors tended to participate more than other classes with freshmen participating the least. These findings may be importnant to provide intramural directors with information to assist in motivating females to increase intramural sports participation.

557. JONES, C. A. Demands of exercise at the anaerobic threshold in smokers exposed to carbon monoxide. M.S. in Physical Education, 1984, 250 p. (W. G. Herbert)

Ss included 9 physically inactive young adult male smokers who smoked more than 10 cig/day and who exercised less than 3 day/wk with a M age of 24.5 yr ± 1.12 and a predicted body fat of 13.2% ± 1.63%. The study attempted to determined if exp-induced elevations in PET_{CO} would alter the perceptual and physiological demands of aerobic exercise. The PET_{CO}

level recorded from the Ss was 42 ppm ± 4.63. A GXT was administered on a Monark cycle ergometer to develop an exercise prescription with workload increased 15w/30sec. M anaerobic threshold 95% VO2max was 50% ± 4.80%. Ss were assigned to perform 45 min continuous exercise bouts under 2 diff exp conditions having been assigned randomly and in a single-blind design. Ss refrained from smoking for 15 hr prior to each exp trial. A Minico-Carbon Monoxide Breath Analyzer verified the Ss PET_{CO}. Before each bout, Ss breathed either a gas mixture of 1500 ppm of CO or a mixture of atmospheric air which contained <5 ppm of CO from a 120 liter wet spirometer. During exercise, Borg 10+ RPE scale, HLa, VO2, HR, VE and f were compared for the CO and placebo trials. Multivariate paired t-test were employed to determine if sig diff existed between the CO and placebo trials. The results for RPE, HLa, VO2, VE, and f displayed a trend toward higher values during the CO trials than the placebo trials. However, only diff in HLa and HR were statistically sig (<.05). These data suggest an increased physiological cost of moderate exercise associated with preliminary exposure to CO in amounts which characterize the moderate smokers habit.

558. MATHIESON, R. A. The effect of an aerobic exercise program and two hypocaloric diets of different carbohydrate content on basal metabolic rate and thyroid hormones. M.S. in Physical Education, 1984, 116 p. (J. L. Walberg)

12 obese young women were sutdied to determine the effects of the combination of an aerobic exercise program with either HC hypocaloric diet or a LC hypocaloric diet on BMR, T4, T3, and rT3. Ss were placed on 1 of the diets and participated in thrice weekly submaximal exercise sessions for 28 days. Post-treatment the Ss consumed a 1000 kcal mixed diet while continuing the exercise program. Measurements of BMR, T4, T3, and rT3 were made weekly. Wt sig decreased in both groups but there was no sig group interaction. There were no sig diff in T4 for either group.

Values for T3 decreased sig during the entire treatment period in the LC group while HC group T3 values did not decrease sig until wk 4. Reverse T3 increased sig in both groups during the 1st wk of treatment, but began to revert back towards baseline in both groups by wk 4. No sig group interaction for BMR. Both groups exhibited decreases in BMR during treatment, but values were not sig lower than baseline until wk 3. These data suggest that decrease in BMR were not solely dependent on serum T3 changes and that other factors possibly associated with exercise induced hormonal changes may have accounted for the similar BMR observed in both groups.

559. MC ELVEEN, G. W. Physiological responses to maximal exercise in tethered swimming, leg cycle ergometry, and simultaneous arm and leg work on an air braked ergometer among swimmers. M.S. in Physical Education, 1984, 151 p. (G. H. Bell)

15 male swimmers, aged 36.4 ± 4.6 yrs performed max exercise test on TS, LC and A+L, to determine whether TS responses may be predicted by LC or A+L tests among swimmers. Test order was counterbalanced across Ss. Max values for HR, absolute and relative O2 uptake, ventilation, systolic and diastolic BP elicited by TS, LC and A+L exercises were compared by univariate ANOVA. HR, absolute O2 uptake, ventilation and diastolic BP reponses to A+L exercise were sig ($p<.05$) greater than the corresponding responses to TS exercise. Absolute O2 uptake and ventilation response to A+L exercise also sig ($p<0.05$) exceeded those produced by LC exercise. No sig diff were observed between TS and LC data. Results indicate that among these Ss, max LC exercise elicits accurate estimates of physiological responses to max TS whereas A+L ergometry overestimates TS responses.

560. ORR, B. L. The effects of MCT oil and glucose polymer ingestion on endurance exercise. M.S. in Physical Education, 1984, 95 p. (J. L. Walberg)

7 experienced male bicyclists performed 4 endurance test rides at 70% VO2max on a stationary bicycle at 90 RPM over a 4 wk period. Ss consumed high carbohydrate diet (70%) for 2 days prior to each test ride. During each test HR, RPE, VO2, R, FFA, and serum glucose levels were measured. 1 of the 4 test treatments was randomly administered, in a single-blind design, at 5, 25, and 40 min into each exercise bout. CTR included 50 gelatin capsules containing water, and a lemonade bev (150 ml each) sweetened with an artificial sweetner. Test mixtures were made up in the same manner as the control with the addition of 1 of the test substances: MCT oil, Glucose polymer, MCT plus glucose polymer. Depending on the treatment used, MCT oil-containing capsules replaced water-capsules and/or Polycose was dissolved in the lemonade beverage. Total caloric intake of each trial, except control was 360 calories. No sig diff was found between M time to exhaustion for the 45 treatments. No sig diff was noted between treatments for R, VO2, and HR responses. Sig greater RPE values were found in the first 60 min of exercise for the control treatment as compared to the other 3 treatments. Repeated measures of ANOVA showed that sig higher serum glucose values existed for treatment P as compared to M and also sig higher serum FFA values existed for treatment M as compared to both P and MCT oil with MP over the first 60 min of exercise. This dietary treatment was ineffective in prolonging exercise time.

561. REED, C. R. The effects of light versus moderate exercise added to diet control in a weight reduction program for overweight college women. M.S. in Physical Education, 1984, 71 p. (J. Walberg)

39 over wt college women were assigned to 1 of 3 wt reduction groups: diet control (DC), DC + low intensity exercise (LX), DC + moderate intensity exercise (MX). All were tested for VO2 peak and % fat. DC included a previously designed nutrition education and behavior

modification program 1 time per wk which prescribed a caloric intake based on body wt to result in a 1000 kcal/day dietary deficit. Exercise groups were asked to also attend 3 sessions each wk. In addition to a warm up and cool down, LX exercised at a HR correspondng to 40% of VO2 peak for 35 min per session while MX exercised at 70% of VO2 peak for 20 min. Exercise durations were chosen to match LX and MX for total exercise caloric expenditure. HR was self-monitored every 10 min and sporadically verified by the leader. At the end of 8 wks, there was an overall drop out of the 3 groups of 34% with the DC group having the highest attrition (50%) relative to LX (40%) and MX (20%). VO2 peak did not change sig after 8 wks in any group. However, an improvement in cardiorespiratory efficiency was indicated by the sig reduction of HR at submaximal workload. A sig M decrease of 2.93 ml/kg/min in VO2 at the same submaximal workload was noted. All Ss lost a sig amount of body wt over the 8 wks and the LX group lost 5.1% of fat. The data showed a tendency for exercise coupled with diet control to enhance fat but not total body weight loss. The treatment which enhanced fat loss and most strongly enhanced attendance was a moderate intensity exercise added to diet control.

562. RUTZ, K. The effect of an aerobic exercise program and two hypocaloric diets of different carbohydrate content on blood pressure and sodium balance in obese females. M.S. in Physical Education, 1984, 101 p. (J. L. Walberg)

12 obese normotensive females were studied to determine the effects of either a 71% carbohydrate (HC) hypocaloric diet or a 33% carbohydrate (LC) hypocaloric diet concommitant with an aerobic exercise program on Na balance and BP changes. Ss participated 3 times a wk in a submaximal periodic exercise session and were placed on one of the diets for 28 days. Post-treatment, each participant consumed a 1000 kcal mixed diet while remaining in the exercise program. Daily Na losses were measured by 24 hr

urine collection, and BP were made weekly. Both treatment groups sig decreased in wt with LC losing more than HC (8.0 kg by LC; 6.7 kg by HC). Na excretion fell over time to result in net Na retention over the experimental period. There were no sig diff between groups in serum Na or urine Na balance. Na loss sig decreased across time. Both systolic and diastolic BP decreased non-sig. Carbohydrate inclusion in both diets was found to be effective in retaining Na after 4 days on a VLCD.

563. WILSON, P. D. Selected physiological and perceptual responses of males during prolonged exercise. M.S. in Physical Education, 1984, 129 p. (W. G. Herbert)

6 males of similar body composition and aerobic physical fitness were tested to determine their perceptual responses to exercise and the relation of these perceptions to T_{re} under 3 conditions of thermoregulatory stress. Experimental protocol consisted of 120 min of upright stationery cycling at 50% VO2max under conditions of neutral (24°Ck, 50% RH/hydration (NH)), hot (et$^{\circ}$C, 50% RH/hydration (HH)), and hot (35°, 50% RH/hypohydration (HP)). Perceptual responses were determined by Borg's 10-point category ratio scale and by multi-dimensional symptom scale which contained 6 symptoms commonly associated with heat stress: weakness; fatigue; thirst; irritability; headache; and dizziness. Core temp response and perceptions were obtained throughout exercise in each condition. ANOVA was utilized to determine if sig diff existed between T_{re} responses, symptom scale responses and RPE responses in each condition, revealing sig ($p<0.05$) diff between T_{re} responses in 3 conditions, and for the symptom scale responses of thirst and weakness. Regression analysis within each condition was utilized to evaluate the relationship of T_{re} and RPE responses and T_{re} and combined scores of weakness, fatigue, and thirst, revealing an R^2 of .997 for prediction of T_{re} using RPE data in the HP trial; the R^2 for T_{re} prediction from the symptom scale responses in HP was .992. The R^2 values for

prediction of T_{re} in the NH and HH conditions were .953 and .983. The R^2 obtained in the HH and NH conditions were lower than those obtained in the HP trials for both RPE and symptom scale predictors. These data suggest that RPE is a meaningful predictor of T_{re} increases.

WASHINGTON STATE UNIVERSITY (K. DePauw)
PULLMAN, WASHINGTON

564. BERNHARDT, B. L. A study of the results of two Washington State University exercise programs as useful criteria for a cost-benefit model. M.S. in Physical Education, 1983, 64 p. (K. Depauw)

The relationships between participation in the Faculty/Staff and Adult Fitness programs at Washington State University and several variables thought to be influenced by regular exercise were examined as possible criteria for the formulation of a cost-benefit model for evaluating the benefits of such programs. A four-part survey, the Physical Activity & Health Status Inventory, designed to collect information about exercise habits and health status, was distributed to 811 individuals who were identified as belonging to the Faculty/Staff Program, the Adult Fitness Program, or to a group of non-program participants. Results of the 431 surveys that were returned were tabulated and summarized using simple descriptive statistics. Chi-square analyses failed to identify any sig between program involvement and the number and costs of illnesses and injuries related to physical inactivity. No sig relationship was found between program involvement and other variables thought to be affected by regular exercise. It was concluded that derivation of the components for the cost-benefit model was not possible due to its dependence on measured diff in the responses of the three groups of study participants.

565. DUTHIE, P. R. A biomechanical analysis of the jump of institutionalized individuals with Down's

Syndrome: a longitudinal and cross-sectional study. Ph.D. in Physical Education, 1982, 246 p. (M. Adrian)

In 1971, 1975, and 1979, 50 institutionalized individuals with Down's Syndrome were filmed performing the horizontal jump. Eighteen anatomical landmarks were digitized for the total body center of gravity, angles at three joints, and the angles of inclination of the trunk and shank. Linear momentums were calculated. The subjects were grouped by sex and age. Age group means and total population means for four demographic and 30 biomechanical factors were discussed. An ANCOVA and a Duncan's multiple range test were used to test five kinematic and one kinetic variable for diff among age groups and diff among trials. With all jumps pooled, each factor was correlated with every other factor. The males performed better than the females, but neither performed as well as normal individuals. These Down's Syndrome individuals did not follow the normal developmental curve. All age groups showed a decline in performance between 1975 and 1979. Trunk action contributed to the propulsive force in a higher ratio to leg action than is found in the normal population. There was more variability among S's performances and among Ss than there was across age groups.

566. EVANS, G. G. Kinetic and kinematic analysis of the clear backward hip circle to handstand on the uneven parallel bars. Ph.D. in Physical Education, 1983, 89 p. (M. J. Adrian)

Kinetic and kinematic data were examined for 4 female colegiate gymnast performing 3 trials each of a clear backward hip circle (CBHC) to handstand on the uneven parallel bars. From film, the 12 trials were ranked with respect to quality of performance by a panel of 4 gymnastics experts. To determine typical patterns of motion among the trials, digitized high speed film data were examined with respect to selected kinematic and kinetic variables.

Force-time histories obtained from strain gauges attached to the bar and connected to a visicorder were qualitatively and quantitatively evaluated. Spearman rank correlations between the rankings of performance and selected variables yielded positive relationships (r>.70) between the quality of performance and the total amount of positive work and power and a negative relationship between quality of performance and maximum negative acceleration of the COG in the X direction. These relationships could be used as predictive variables for a model of the CBHC to handstand. The most discriminating variables in terms of successful performance of a CBHC to handstand were the maximum velocity of flexion at the shoulder and the instant at which this maximum velocity occurred.

567. GIBBONS, S. L. The development of strategies for the direct teaching of values in physical education. M.S. in Physical Education, 1983, 115 p. (M. Bayles)

Development of strategies was based upon modification and integration of two widely accepted models of curriculum design. The model was applied to the PE curriculum in a selected JHS/SHS. The selection of values to be included was based on survey responses from teachers, students, ad parents of the above school. Specific values were categorized under the following value concepts: good sportsmanship, positive leadership, teamwork, positive self-concept, and appreciation for physical activity. Results were tabulated in % of response for each value. Results of the survey from all three responding groups indicated a greater familiarity with values describing good sportsmanship and teamwork. A lesser degree of familiarity with the remaining three concepts was noted in the results. Elements of the following strategies were used in the design of classroom experiences: values clarification, role-playing, peer modeling, problem solving, goal setting, and behavior modification. The final result of the study, a manual for teaching values in physical education, was an attempt by the investigator to fulfill the purpose of organizing selected strategies for teaching values into a useable form. A formative evaluation was conducted to complete the manual prior to application in a practical setting.

568. GRAFFIS, K. H. The relative effectiveness of six different methods of increasing leg power on vertical jumping ability. M.S. in Physical Education, 1983, 63 p. (K. A. Penman)

The investigator determined, through analysis of performance on the vertical power jump (WORK), the relative effectiveness of six diff methods for increasing leg power. Ss utilized in this investigation consisted of 138 males enrolled in six coed weight training classes at WA State University. Groups I (N = 21), II (N = 25), and III (N = 20) utilized the squat, performed with the knees flexed until the top of the thighs were parallel to the floor (approximately 60-70 degrees), 90 and 110 degrees respectively. Group IV (N = 28) utilized the dyna-stat squat, performed with the knees flexed at 90 degrees. Group V (N = 18) performed depth jumps from heights of 45.72, 60.96, and 72.20 cm, and Group VI (N = 26) used a combination of all the above exercises as a means of incorporating variety into one's weight training routine. The Gossett t-test and ANOVA were used to determine if the calculated values within and between the group means were sig. Based on the table values for a t distribution, all groups showed statistically sig improvement on the vertical power jump (WORK). No statistically sig diff existed between the six diff methods of increasing leg power in relation to performance on the vertical power jump (WORK).

569. GREGORY, D. P. Effects of varying the composition of the pre-performance meal on time recorded in the two mile run. M.S. in Physical Education, 1982, 38 p. (K. Penman)

12 college-age males (20-28 yrs) were tested for time required to complete a two mile run following ingestion of a varied pre-performance meal. The meal consisted of a drink which included either fat, carbohydrate or protein and was given to the Ss two hours prior to the trial run. Ss ingested the various treatment meals and ran 2 mi. on Monday, Wednesday and Friday for 3 consecutive weeks on an indoor track in the Hollingbery Fieldhouse at WA State University. Data were collected and analyzed using the SAS, GLM Type IV Sums of Squares computer program. Results showed that no statistically sig diff existed between trial times following ingestion of any particular treatment meal. It was therefore concluded that variations in the pre-performance meal had no effect on performance in the two mile run.

570. HALL, S. J. An analysis of selected factors affecting lumbar forces during lifting. Ph.D. in Physical Education, 1982, 141 p. (M. J. Adrian)

Factors affecting compressive and shear forces and torque at the L5/S1 intervertebral joint were examined for nine diff load/lifting time combinations of the clean and jerk performed by 10 female Ss. Loads utilized were 40%, 60%, and 80% of each S's max, with designated lifting-times of 1.5, 3.5, and 7 sec. Lumbar and abdominal EMG, ground forces, intra-abdominal pressure, and selected kinematic aspects of the lifts were monitored. Pearson r's, calculated for each of the 90 trials, were positive for lumbar EMG and reactive torque at L5/S1; and for absolute turn angle and both compressive force at L5/S1 and abdominal EMG. Negative Pearson r's were found for lumbar EMG and compressive force at L5/S1; and for absolute trunk angle and reactive torque at L5/S1, shear force at L5/S1, and lumbar EMG. The effects of load and ligting-time were assessed through two-way ANOVA's. Load was sig with $p<.001$ for M compressive ad shear forces at L5/S1 and for max lumbar EMG. The F's for lifting time were sig with $P<.05$ for M and max compressive force, shear force, and reactive torque at L5/S1, and for M and max lumbar EMG.

571. HERSHFIELD, J. P. Policies and procedures manual for student athletic trainers at Washington State University. M.S., 1984, 219 p. (D. D. Sebold)

The purpose of this project was to develop a policies and procedures manual designed to provide information on professional, educational, and clinical requirements established by the National Athletic Trainers Association approved undergraduate curriculum in athletic training at WA State University. Materials were gathered from the National Athletic Trainers Association, the W.S.U. athletic training Program Director, the W.S.U. certified athletic training staff, the W.S.U. student athletic trainers, and the medical staff serving the athletic DEPT at WA State University. A preliminary draft of the manual was evaluated by the material resources at W.S.U., and appropriate revisions were incorporated into the final draft.

572. HWANG, I. Prediction of loads on the lumbar spine during hammer throwing utilizing mathematical modeling. Ph.D. in Physical Education, 1983, 319 p. (M. Adrian)

Compressive and shear forces on the lumbar spine (L3 level) were predicted for one best hammer throw in terms of distance among the 7 trials by a S using a 66.75 N hammer head. Tensional force was measured by means of a 1.28 m wire attached to the hammer with an 11 N strain gauge dynamometer in the middle of the wire. A biomechanical model of the human body was used to approximate net forces and net moments at L3 level in three dimensions from digitized high speed film data with an assumption of quasi-static for each successive 0.059 sec interval of the hammer throw. Compressive force and shear force on L3 were determined using Schultz's biomechanical model and optimization technique. The variables analyzed included selected kinematic aspects, tangential and normal components of the tensional force, and the recruiting pattern of muscles and contraction intensities of those muscles on L3 region during the hammer throw.

573. LINDOO, J. M. Myoelectrical activity of the gluteus maximus during selected aerobic dance exercises. M.S. in Physical Education, 1984, 55 p. (S. Hall)

The purpose of the study was to examine the relative amounts of myoelectric activity present in the gluteus maximus during the performance of six selected aerobic dance exercises by 9 female Ss. For purposes of comparison, electrical activity in the gluteus maximus during stair climbing was also quantified. The variables evaluated for each subject during each exercise included the range of motion at the hip, the range of motion at the hip through which the muscle was active, and the angle at the hip at which the most myoelectric activity was present. Maximum spike amplitudes occurring in the electromyograms were also quantified and compared on a relative basis. The results indicated that the six aerobic dance exercises ad the stair climbing exercise all appear to elicit approximately the same amount of electrical activity from the gluteus maximus. The gluteus maximus produced the greatest amount of electrical activity near both the end of the extension movement and the end of the abduction movement during the aerobic dance exercises. It was concluded that the aerobic dance exercises tested do indeed appear to exercise the gluteus maximus.

574. MC NALLY, B. J. A comparison of groundstroke performance using a bent handle tennis racquet and a straight handle tennis racquet. M.S. in Physical Education, 1984, 52 p. (S. H. Adams)

This study was designed to determine if advanced or advanced intermediate level tennis players could hit groundstrokes as well with a bent handle tennis racquet as with a straight handle tennis racquet. Ss consisted of members of the advanced tennis classes at WA State University and 5 players subjectively determined by the author to be advanced level players. 40 Ss were tested, 24 males and 16 females. The groundstroke (forehand and backhand) portion of the Talent-N-Timing/Tennis Test was administered. Each S completed the test 4 times, once with each racquet on two separate days. The test results were combined by groundstroke. The data were statistically treated as a two factor exp with repeated measures. The results were analyzed using an ANOVA and Duncan's multiple range test. A sig diff was found between the bent handle racquet and the straight handle racquet at the $p=.05$ level. The straight handle racquet ($M = 72.95$) produced better results than the bent handle racquet ($M = 66.77$) in both the forehand and backhand groundstrokes. 78% of the Ss who indicated a racquet preference in a subjective rating questionnaire chose the straight handle racquet.

575. MOE, E. L. A comparison of batting using bent handled and straight handled bats. M.S. in Physical Education, 1982, 60 p. (M. J. Adrian)

The velocities of the ball after contact when batting a softball using bent and straight handled bats were compared for 32 women softball players. A Latin Square Design was used and no statistical diff were found using either a pitching machine ($t = .61$, n.s.) or a batting tee ($t = .95$, n.s.). Film analysis of six Ss hitting softballs in each of the four testing situations (tee, straight bat; tee, bent bat; pitching machine, straight bat; pitching machine, bent bat) was completed, examining selected batting components. No sig diff were found in any of the components measured. Any diff between the bent bat and straight bat while batting may be due to chance. As a subjective appraisal, all Ss recorded their preference for either the straight or bent bat. Ss had a definite preference (84%) for the bent bat ($X^2 = 15.13$, $p<.05$).

576. MOORE, K. J. A comparison study of two methods of teaching the full golf swing to beginner golfers. M.S. in Physical Education, 1982, 42 p. (J. R. Christopher)

This study compared the relative effectiveness of two diff methods of teaching the full golf swing to beginning golfers. Two groups of subjects, utilized in a post-test only design, were examined: progressive-hitting group (n=53) and full swing-nonhitting group (n=57). Ss attended "Beginning Golf" classes twice a week with instructional time for the golf swing totaling 75 minutes per class period. The instructional and testing periods included nine class periods. The Benson 5-Iron Test was administered to each subject at the conclusion of full swing instruction because it produced a score incorporating both distance and accuracy, which is the essence of a full swing. Analysis of this data (test scores) was the formulated through the use of Gosett's t test. Computation revealed no sig diff (p>.05) between the progressive-hitting teaching method and the full swing-nonhitting method. It was concluded that neither teaching method was superior in a large group learning situation.

577. MOORE, R. L. The effect of training on beta adrenergic receptor number in rat heart. Ph.D. in Physical Education, 1982, 37 p. (P. D. Gollnick)

Female Sprague-Dawley rats were subjected to treadmill training programs and the effect of training on myocardial beta adrenergic receptor number, receptor binding characteristics, and adenylate cyclase (AC) activities associated with the receptor were examined. Training produced a 45% increase in the succinate dehydrogenase activity of plantaris muscle. Specific (-) (^{3}H)-dihydroalprenolol (DHA) binding data were subjected to Scatchard plot analysis in order to quantify beta adrenergic receptor number and DHA binding characteristics of myocardial membranes prepared by differential centrifugation. The DHA concentration at which 50% of the total binding sites were occupied (K_D) were similar for control (1.95 ± 0.51 nM) and trained (1.59 ± 0.34 nM) animal membrane preparations. Total DHA binding sites for control (91.6 ± 13.3 fmol/mg) and trained (83.1 ± 7.6 fmol/mg) animal membrane preparations were also statistically similar. Training produced no changes in basal or maximally stimulated (isoproterenol) adenylate cyclase activities. Fouride stimulated AC activities of crude homogenate and 10,000 x g fractions decreased (47 and 49%, respectively) with training. No such diff was seen in a 40,000 x g fraction. Training produced no changes in the specific activities of a ouabain-sensitive sodium potassium ATPase (a sarcolemmal membrane marker) of crude homogenate, 10,000 x g, and 40,000 x g membrane fractions. These data indicate that training produces no detectable diff in the potential for adrenergic response at the receptor level.

578. OSLAND, J. D. Physical fitness norms for the Royal Saudi Air Force Personnel. M.S. in Physical Education, 1984, 36 p. (D. L. Engerbertson)

This investigation was undertaken to develop physical fitness norms for the Royal Saudi Air Force (RSAF) personnel, since no norms had existed for this population. The Ss included 677 male personnel of the RSAF who ranged from 17 to 52 yrs of age. The testing consisted of three physical body measurements: (a) height, (b) weight, and (c) % body fat, and six performance tests: (a) bent leg sit-ups, (b) combined grip strength, (c) standing long jump, (d) sit and reach, (e) flexed arm hang, and (f) Harvard step test. These tests measured the physical components of body composition, muscular endurance, muscular strength, flexibility, power, and cardiovascular fitness. The tests results were then divided into three S age groups: (a) 24 and under, (b) 25 to 34, and (c) 35 and above. These data were arranged into tables which contained the number of subjects, standard deviation, range of scores, mean scores, and percentiles.

579. PARSONS, D. G. Muscle fiber number: Response to changes in muscle growth. Ph.D. in Physical Education, 1982, 74 p. (P. D. Gollnick)

Three groups of animals were used to examine the effects of chronic stretch and altered caloric intake on muscle cell proliferation. Muscle enlargement was induced in the anterior latissimus dorsi (ALD) muscle of White Leghorn chickens by hanging weights on the distal portion of one wing. Caloric intake was regulated by fasting weanling rats for 3 days followed by a return to a regular feeding schedule. Adjusting the litter size to small (AG), normal (NorG), and large (RG), numbers of pups per mother varied the caloric intake for newborn rats. The average increase in weight for the ALD muscle was 150%. The soleus muscle weight from the fasted rats was not diff from the soleus muscle weights of the control animals. The growth rate of the RG animals was slower than the animals in the AG groups. The fiber number of the ALD and the rat soleus muscles was determined by a digestion-dissection technique where each muscle fiber was counted individually. There was no diff in the fiber number between the control and hypertrophied ALD muscles. There was no diff in the fiber number for the soleus muscles between the fasted, fasted-fed, or control weanling rats or the mature rats from the three growth-rate litters. Branched muscle fibers were found in most ALD and soleus muscles from young and mature animals. The frequency of bifurcated fibers did not change with any exp perturbation. Growth in these muscles was attributed to hypertrophy of the fiber volume components and not hyperplasia.

580. PECKHAM, J. E. Depth perception and the developmental stages of catching found in able-bodied and disabled individuals. M.S. in Physical Education, 1984, 53 p. (K. DePauw)

Depth perception and catching ability were ingestigated for the two groups. The Ss included 100 able-bodied students, ranging in age from 5 yr. 5 mo. to 9 yr. 10 mo. 10 males and 10 females were randomly selected for the five age groups. A second group (total n=16) involved mildly to severely mentally retarded Ss, from 8 yr. 4 mo. to 21 yr. 3 mo. A Depth Perception Apparatus was used to measure static depth perception. Level of catching was determined by subjective evaluation with the aid of video-tape equipment. Data were collected over a period of seven weeks. Analysis of data was completed through the use of X^2, ANOVA, and the Correlation Ratio. Results from the study indicated that there were diff between depth perception and the developmetnal stages of catching found in able-bodied and disabled individuals.

581. POIROT, J. L. Sport as an aesthetic experience. M.S. in Physical Education, 1983, 76 p. (W. C. Weaver)

The concept of aesthetics can be defined in terms of features: unity, variety and intensity, and in terms of aspects which comprise the aesthetic when viewed as parts of a whole. The main aspects are meaning, symbolism, expression, form matter and style. These features and aspects of aesthetics found in the art world were used in drawing parallels to the sport world. In order for a person to gain an aesthetic experience, s/he has first to be aware of the potential for such an experience in a given situation--here the sport event. Secondly, the individual must have a certain state of mind known as "the aesthetic attitude" when viewing or participating in sport activity. Thirdly, the "act of object" upon which the focus of attention rests, must possess aesthetic values. It was also suggested that the most rewarding experiences are those in which a person is actively participating, as opposed to those in which he is an entertained observer. Sport holds aesthetic values and has the potential for providing aesthetic experience to those who commit themselves to qualitative movement.

582. RAUNIG, L. C. Competencies for coaching the female athlete. M.S. in Physical Education, 1982, 59 p. (S. H. Adams)

The purpose of this study was to compare coaching competencies identified as being most important by female athletes, coaches of female athletes, and athletic directors of women's intercollegiate sports programs. The study was conducted by means of a questionnaire technique which included various competencies the coach of the female athlete might be expected to possess. Ss were asked to rank statements with respect to importance. In this study, a sample of athletes (n=152), coaches (n=25), and athletic directors (n=24) was made. That data were analyzed by the chi square test, using .10 as the level in determining statistical sig. A sig diff between groups existed on 13 of the 40 competencies tested. The hypothesis that there would be no sig diff between groups was not supported on these 13 competencies.

583. REIFSTECK, J. A. Cinematographical analysis of overarm throwing patterns of elderly men and women. M.S. in Physical Education, 1982. (M. Adrian)

9 male and 9 female right-handed Ss, aged 65-76, were filmed from the side and rear views at a task of a forceful overarm softball throw at a target 4.8 m away. A filmed trial of each S was selected for: a) throwing pattern evaluations assessed by a checklist of throwing elements and throwing stage evaluations, and b) to obtain displacement data on selected kinematic variables. All Ss escept one, were capable of producing a mature overarm throwing pattern in leg movements, but 7 females and 1 male produced immature patterns of the trunk and arms. The head-to-ball distance, stride length, and shoulder velocity variables were sig in their correlation to ball velocity at release ($p<.01$), and

therefore could be used as predictors of overarm throwing performance in older persons. Males had greater ball velocities (M 13.03 m/s) than the females (M 9.31 m/s). The ball velocities of the Ss ranged from 7.79 to 16.88 m/s, comparing most favorably to the ball velocities of normal adult females age 18.23 (Leme & Shambes, 1978), and K-2 boys and girls (Roberton et al., 1979).

584. ROSSI, A. J. The effects of massed and distributed practice on the learning and performance of a continuous and a discrete task. M.S. in Physical Education, 1983, 52 p. (K. P. DePauw)

Effects of massed and distributed practice on learning and performance were studied using continuous and discrete soccer tasks. Members of two beginning soccer classes (n = 24), assigned randomly either to a massed practice group or distributed practice group, performed both tasks. For the continuous task, the Ss were to dribble a soccer ball through a straight line of 10 cones, in the least possible time, making as few mistakes as possible. The massed group had 5 sec rest between trials, the distributed group had 60 sec. For the discrete task, the Ss were to kick a soccer ball at a target at 8 sec intervals. There were four attempts per trial. The massed group had 5 sec rest between trials, the distributed group had 35 sec. A t test revealed no sig diff between group posttest Ms for both tasks. Performance curves revealed the distributed group was superior in continouous task performance. No diff between the groups for discrete task performance was apparent. It was concluded that for continuous and discrete soccer tasks, learning is not diff affected by massed or distributed practice. Also, distributed practice appeared to result in superior continuous task performance.

585. RUSSELL, P. J. The effects of aerobic dance upon the cardiovascular fitness of women at Washington State University. M.S. in Physical Education, 1982, 43 p. (K. A. Penman)

This study determined the effects of aerobic dance upon the cardiovascular fitness of college aged women at WA State University. Three groups of Ss, each divided into a pretest-posttest group and a posttest only group were examined: controls (n=29), aerobic dance only (ADO) (n=46), and aerobic dance plus (AD+) (n=38). Exp Ss either trained twice a wk for 40 minutes over 9-10 wks (ADO group) or participated in comparable additional aerobic activities outside of class as well as the aforementioned training (AD+ group). A one way ANOVA, used to compare nine means, was followed by Scheffe's test. Sig diff were found ($p<.05$) between the ADO pretest group and the AD+ pre and posttest groups. A second one way ANOVA, used to compare the means of the diff between pre and posttest scores of the three groups, revealed no sig diffs ($p<.05$). Two conclusions were drawn: the AD+ group was in better condition than the ADO group prior to treatment, and the aerobic dance program at WA State University as taught by two insturctors to the majority of participants did not sig improve cardiovascular fitness.

586. SCHILLING, M. K. Effects of three teaching methods on increasing skill performance in racquetball. M.S. in Physical Education, 1983, 104 p. (M. Adrian)

This study was undertaken to determine if there was a sig diff among three diff teaching methods on skill learning in racquetball. Group I received verbal and visual guidance through lectures and demonstrations. Group II was instructed individually by the use of wireless headphones. Group III was instructed only through the use of the headphones without the benefit of lectures, demonstrations, or written information on the blackboard. Students in Group I were randomly selected whereas students in Group II and Group III participated in homogeneous skill level sub-groups during the semester. To evaluate the teaching methods and effect upon skill learning, a test consisting of three components was administered to each group by the 1977-1978 graduate teaching assistants. The test consisted of the 60 Second Rally, the Power Drive, and the Shot Placement Back Wall. The results of ANCOVA indicated that there was no sig diff among the effectiveness of the three teaching methods. The results of the 60 Second Rally and Power Drive test components for all three groups were sig on the t test. Group III was the only group which did not show a sig level of improvement for the Shot Placement Back Wall of the t-test.

587. SIMPSON, K. J. The differences in movement reactions among individuals of various hand preferences. M.S. in Physical Education, 1982, 49 p. (K. P. DePauw)

The purpose of the study was to determine whether there are diff in movement reactions among individuals of various hand preferences. Hand preference (right, left, or mixed) of 36 male and 36 female college students was assessed. Five tests were used to measure the following factors of movement reactions: fine control sensitivity, hand steadiness, reaction time, response orientation, and speed of arm movement. Hand preference, hand used, and sex were analyzed as main effects on a 3 x 2 x 2 factorial ANOVA for each test. No diff in ability were found among handedness groups except on response orientation. Tukey test results revealed right-handers had faster discrimination reaction times than left- and mixed-handers. Sig interaction between hand used and hand preference occurred on the rotary pursuit (fine control sensitivity). From the Tukey test, it was shown that right-hand performance was higher than left-hand performance for right handers. Males scored higher than females on all factors except for fine control sensitivity where no diff were found. In conclusion, there is little diff in movement reaction ability among individuals of various hand preferences or between hands, but a sig diff may exist between males and females.

588. SNELL, P. G. Cardiovascular and metabolic response

during exercise at various fixed heart rates: studies during short and prolonged exercise of varying intensities. Ph.D. in Physical Education, 1982, 111 p. (P. D. Gollnick)

The cardiovascular, respiratory, and metabolic responses to short and prolonged exercise of varying intensities, were studied in a 46 yr old male S at varying fixed heart rates (HR). Tw CO2 rebreathing methods were used to estimate cardiovascular responses during upright bicycle exercise. Additional data from two cardiology laboratories using radionuclide scanning, were included in the analysis. Maximal oxygen uptake (VO2 max) increased from 2.07 l/min at a HR of 70 beats/min to 3.05 l/min at a HR of 115, which was 75% of the VO2 max prior to surgery. These values were achieved by cardiac outputs (Q) ranging from 11.9 to 17.4 l/min, in combination with a high level of oxygen extraction, resulting in a total body arteriovenous oxygen diff (a-v O2 diff) of about 175 ml/l at each HR. At submaximal levels of exercise, the VO2 at each HR demonstrated the same relationship to power output as normal Ss, however, Q was consistently lower, resulting in higher a-v O2 diff. Ventilation (V_E) was normal up to 1.5 l/min VO2, with a tendency to be slightly elevated at 70 HR. During 60 mins of exercise at 70 HR, VO2 was constant at each of the exercise intensities, which ranged from 59 to 92% VO2 max. The response of plasma FFA, glucose and lactate was normal. The findings of this study indicate that, individuals with a fixed HR of 70 and a healthy myocardium, have substantial reserve within the cardiovascular system to increase their work capacity. It was further shown that increases in the fixed HR result in a move toward the normal exercise response.

589. TOURIGNY, C. T. The effects of walking as an alternative means to fitness for the middle-aged and older individual. M.S. in Physical Education, 1984, 74 p. (R. C. Wiley)

The effects of walking as a means to fitness for individuals between the ages 30-72 yrs was investigated. 3 female and 4 male Ss were tested using the Performance 2000 Computerized Fitness System. The walking program was conducted three days per wk and the S's work intensity was determined by his/her pre-training fitness level and Karvonen's formula for determining target heart rates. A case study questionnaire was used for descriptive and statistical analysis. A t-test was used to analyze pre-training and post-training measurements. Point-biserial correlation was used to correlate case study results with overall improvements in cardiovascular variables. Sig diff were found between four out of six of the pre-training and post-training cardiovascular variables at the .05 level of probability. these were resting heart rate, recovery heart rate, estimated maximum oxygen uptake, and estimated maximum work capacity. No sig correlation existed between Ss who had past exposure to exercise, or had been sedentary prior to the program, and their overall percentage of improvement in cardiovascular measurements.

590. VAUGHN, R. E. The relationship of selected kinematic and anthropometric measures to throwing velocity of baseball pitchers. Ph.D. in Physical Education, 1982, 140 p. (M. Adrian)

The primary purpose of this study was to conduct a three-dimensional kinematic analysis of the arm action during high velocity overarm baseball pitches. Twelve high school and college varsity baseball pitchers were filmed by three high speed cameras as they performed an overarm fastball pitch. An algorithm was developed for the purpose of quantitatively measuring the rate of humeral rotation and flexion/extension at the elbow and wrist joints. A multivariate analysis was undertaken to examine relationships between throwing velocity and selected kinematic and anthropometric measures. Results of this study support the conclusion that throwing velocity depends more upon kinematic variables than on anthropometric variables. Highest ball velocities were attained by pitchers who maintained contact with the ball until the pitching arm had rotated as far as possible in the direction of the pitch. It was also concluded that maximizing upper arm velocity and angular velocity at the elbow joint is more important to attaining high ball velocity than is the angular velocity at the wrist joint.

591. VERNEY, D. E. A comparison of the Verney lifesaving ring and the standard ring buoy. M.S. in Physical Education, 1984, 50 p. (G. E. DeMers)

Ring buoys were compared to ascertain whether the Standard Ring Buoy (SRB) could be modified to impart a better performance for accuracy and distance. A ring buoy with four grips was developed. Preferential grip sizes were determined by measuring the grips of 132 college students. 40 male and 32 female college students (ages 18-22) were given insturctions in the ring buoy throwing technique. One group (20 males; 15 females) used the Verney Lifesaving Ring (VLR) and one group (20 males; 17 females) used the SRB for accuracy and distance tests. A 2 x 2 ANOVA was utilized for the two tests. The Scheffe test was utilized for the sex by equipment comparisons. The VLS group performed sig better than the SRB group for both tests, $p<.05$. The VLR females performed sig better than the SRB females for both tests, $p<.05$. The VLR males did not perform sig better than the SRB males for both tests, $p>.05$. The VLR could be thrown more accurately and farther than the SRB and benefited the performance of females more than that of males.

592. WADLEIGH, C. Dance therapy: goals and methods as applied to physical education. M.S. in Physical Education, 1984, 120 p. (W. C. Weaver)

The purpose of this study was to investigate how the goals of dance therapy relate to those of physical education, how dance therapy methods can assist in the fuller realization of common goals in the affective domain, and how a philosophy built on a synthesis of ideas concerning this relationship of goals and methods can result in the development of a guide for practical application of this philosophy by the classroom teacher. The history, philosopy, goals, and methods of dance therapy and physical education were discussed and compared. Statements concerning the process of extending the quality of emotional life and their importance for the future were examined and movement as a means for attaining this goal was discussed. Since few actual methods for attaining goals exclusively in the affective domain appear in physical education literature, an experiential practicum was undertaken in order to determine the feasibility of utilizing dance therapy methods with elementary school students. It was concluded that dance therapy is valuable as a body of information with useful tools that could help physical education meet the needs of the future.

593. WILSON, T. P. Effects of aerobic activity and relaxation upon the attending behaviors and cardiovascular function of children with learning disabilities. M.S. in Physical Education, 1984, 36 p. (K. DePauw)

44 elementary age students (8 yrs, 2 mos. to 12 yrs, 9 mos.) with learning disabilities were tested to measure the effects of aerobic activity and relaxation upon attending behavior and cardiovascular function. A pretest-posttest exp period design was utilized. The Ss were in three groups; an aerobic (n=15), relaxation (n=15), and control (n=14) group. The three groups participated in an eight wk treatment program. The aerobic group was involved in an aerobic program three times per week for 25 minutes. Similarly, the relaxation group participated in a relaxation program three times per wk for 20 minutes. The control group was involved in regularly scheduled classroom activities. Attending behaviors (measured by behavioral observations) and cardiovascular function (measured by the mile run) were the dependent variables. These were measured

before and after the treatment period. The data were subjected to statistical analyses using an ANOVA and an ANCOVA. No sig diff were found among the groups in attending behavior and cardiovascular function.

WESTERN ILLINOIS UNIVERSITY (W. Lakie)
MACOMB, ILLINOIS

594. BALD, T. A. The effect of music on performance. M.S. in Physical Education, 1984, 20 p. (R. Gedney and D. Mapes)

14 males Ss completed 6 trials of the chest press exercise; 3 in the presence of soothing music, 3 in the presence of stimulating music. The dependent t-test and X^2 analysis were used to analyze the recorded data. For the chest press exercise, the type of music played made no sig diff in no. of repetitions. When a no diff category was included as a possible response to the Ss perception music as beneficial, neither of the musical forms were perceived as more beneficial than the other. When the Ss were forced to select one of the musical forms, they perceived stimulating music as more beneficial than soothing music in the performance of the exercise task.

595. CHRISTENSEN, D. A comparison of the effects of right-hand versus left-handed instruction on the learning of a novel skill by left-handed subjects. M.S. in Physical Education, 1984, 50 p. (D. Phillips)

230 left-handed Ss (male-female), ages 10-12, were randomly placed in 2 groups. Group I received left-handed instruction for a novel ball throwing task; Group II received right-handed instruction for the same task. A 2-way ANOVA indicated no sif diff existed between the scores of Group I and Group II. Age and sex of the Ss were found to have no sig diff on performance of skill. There was no

interaction between age and instruction or sex and instruction.

596. ISLEY, R. A study of the professional life of Clarence E. "Bighouse" Gaines while at Winston-Salem State University. M.S. in Physical Education, 1983, 62 p. (G. Hermann)

Data on the professional life and accomplishments of "Bighouse" Gaines was procured through: personal interview, questionnaires, books, newspapers, journals, magazines and video tapes. The data were separated into five categories. Gaines as a young man prior to his coming to Winston-Salem (1923-1945). Gaines' early years at Winston-Salem (1957-1967), during these years he went from assistant coach in all sports to athletic director and head coach of all sports. Gaines as the winner of the NCAA Div II Nat Championships, during this time (1957-1967) black college basketball reached its peak in popularity. The years 1968-1983 related to the decline in quality of black college basketball due to large scale recruitment of black players by predominantly white institutions. The last section looks at Gaines as an individual and how he is viewed by his peers, players and associates. It was concluded that Mr. Gaines' accomplishments in athletics, youth development, and community service are representative of the man. Even though he is a member of 5 halls of fame and currently is the most victorious active coach in college basketball, his greatest contribution is the effect he has had on all those who have been in contact with him either professionally or personally.

597. JOHNSON, S. R. Prediction equations for percent body fat, body density and lean body weight on a sample of obese college age women. M.S. in Physical Education, 1983, 70 p. (R. Aten and B. Chapman)

60 obese college-age females were measured for several anthropometric variables to develop prediction equations for body density. An r matrix was generated from the collected data and stepwise multiple regression equations were derived. Body density was predicted from the sum of subscapular, midaxillary and suprailiac and thigh skinfolds (r = .77) Percent body fat was predicted from the same variables (r = .78). Lean body weight was predicted using body weight, the sum of 3 skinfolds and 2 widths (r=.97).

598. JONES, A. T. The effects of jazz dance and aerobic dance on self-concept. M.S. in Physical Education, 1984, 83 p. (C. Colvin)

The Ss (College age) were 17 females enrolled in an aerobic dance class and 7 females enrolled in a jazz dance class. The control group was 14 females enrolled in an introductory psychology class. The Ss attended a 14-wk class. A t-test was used to compare the pretest and the postest Ms for the overall self-concept (counseling form TSCS) scores and the 9 sub-scales within each group. No sig diff was found.

599. MC KISSICK, S. A comparison of hostility levels of male intramural basketball participants at Western Illinois University. M.S. in Physical Education, 1984, 50 p. (J. Colgate)

Hostility levels of pre-season players (344), regular season first game winners and losers, and post season first-round winners and losers were determined by utilizing a pre and post game administration of 3 sub-scales of the Buss-Durkee Hostility-Guilt Inventory. Data were analyzed using an ANOVA and a Newman-Keuls test for comparison of group Ms. The post-season winners of their 1st post-season tournament game had a sig higher hostility level than regular season losers of their 1st regular season game. No other sig diff between group Ms were found.

600. SEMPLER, P. D. A comparison of personality

characteristcs of successful female athletes. M.S. in Physical Education, 1983, 47 p. (K. Pearson)

57 executives and 16 athletes completed form B of the 16 PF. Successful female executives were defined as women who researched the executive level within an organization and were listed in the "1982 Additions" to the Standard and Poor's Index of Executives and Directors. Successful female athletes were team sport athletes who had been nominated for the Broderick award. A t-test indicated a sig diff with the executives scoring higher on the following factors: Reserved, Suspicious, Experimenting and Independence. The athletes scored higher on Tough Poise. There were no sig diff on the other factors.

601. PECK, D. M. Determining the opinions of Knox County residents towards selected health education programs. M.S. in Community Health Education, 1984, 76 p. (J. J. Neutens)

The questionnaires sent to 626 randomly selected households in Knox County consisted of 12 major categories in Health Education program topics and a total of 48 specific classes in relation to awareness of program offering, financial support, need for the program and the best means of advertisement. The specific classes which yielded the greatest interest from the respondents were CPR training, coronary disease, hypertension, cancer and first aid, more so that they are also willing to pay for many of the programs which are currently offered at no charge. Recommendations made include reorganizatioon of the community education component of staff development, and community Education DEPT, a need to begin charging for classes, expansion of the programs currently offered, and finally, adjustment of the the publicity for health education programs.

602. SCIESZINSKI, A. G. Patient compliance of a

prescribed diet following discharge from Galesburg Cottage Hospital. M.S. in Community Health Education, 1984, 41 p. (J. J. Neutens)

50 discharged patients who were prescribed a special diet by their physician and instructed on the diet by a registered dietician were involved in the study. A list of questions regarding diet and relevant demographic data such as age, education level, and illness were used for the telephone survey to determine their relationship with patients' compliance. Each S was contacted 4 to 5 wks after discharge from the hospital and data were collected for the preceding month. The X^2 was computed using the Tate's Correction for continuity becuase small expected frequencies were obtained. The X^2 analysis for time of the instruction, age, education, and cost was not sig at the .05 level, therefore, no sig relationship existed between dietary compliance and these factors. For illness, patients diagnosed as diabetic or "other" had a higher percentage of noncompliance while there was no sig conclusion from the data for time, age, education, and cost. The data indicates that other factors may be present that relate to compliance.

WEST VIRGINIA UNIVERSITY

603. BOYD, R. Effect of exercise on ovariectomized calcium-deficient rats. Ed.D. in Physical Education, 1984, 95 p. (R. Kurucz)

604. HUNT, R. An assessment and evaluation of the elementary school physical education programs in the State of West Virginia. Ed.D. in Physical Education, 1984, 122 p. (D. Ziatz)

605. KIMURA, Y. An evaluation of the validity and reliability of simulated swimming exercise for the assessment of VO2 max of Male Collegiate Swimmers. Ed.D. in Physical Education, 1983, 133 p. (R.

Yeater)

606. LANDIN, D. The effects of differential data based feedback strategies on the teaching performance of undergraduate trainers. Ed.D. in Physical Education, 1984, 127 p. (C. Bahneman)

607. REBISH, L. The relationship between leadership, cohesion, motivation, and success among female athletes. M.S. in Physical Education, 1984, 163 p. (D. Brooks)

608. REGER, W. Exercise, post-exercise metabolic rate and appetite. Ed.D. in Physical Education, 1984, 103 p. (R. Kurucz)

609. REID, C. The effects of four constant resistance weight training programs on the physiological functioning of adult males. M.S. in Physical Education, 1984, 103 p. (R. Yeater)

WINTHROP COLLEGE (M. R. Griffin)
ROCK HILL, SOUTH CAROLINA

610. BURCH, J. S. The effects of an audience of same sex and opposite sex on eighth grade boys and girls performing modified sit-ups. M.S. in Physical Education, 1984, 47 p. (C. J. Bowers)

611. CAWLEY, L. M. Comparison of fitness levels of fifth grade boys and girls in a continuous physical education program, a one-year physical education program, and no physical education program. M.S. in Physical Education, 1983, 66 p. (M. R. Griffin)

Using the AAHPERD Related Fitness Test 64 boys and 53 girls in 3 fifth grade classes were tested and compared on fitness items. One group (n=39) had had a continuous program of elementary PE; one group (n=35) had had PE for one year; one group (n=43) had had no formal program. The 4 item test battery was administered over 2 days in each school. No sig diff were found among the 3 groups in sit and reach, body composition, or mile run. A sig diff on situps was found between the one-year group (M=26.4) and no PE group (M=32.4). There were sig diff on sit and reach between males (M=26.6) and females (M=32.5); and on mile run between males (M=26.4) was found on situps. No sig diff existed on body composition scores. This study indicated the need for greater emphasis on development of fitness in programs of 5th grade PE.

612. COX, J. L. The effects of outdoor adventure experiences on the self concept of Harding High School freshmen. M.S. in Physical Education, 1984, 119 p. (M. W. Ford)

613. JONES, D. A. The Scholastic Aptitude Test, National Teacher Examination and collegiate grade point average as predictors of success on the assessments of performance teaching: Observation instrument by physical education majors at Winthrop College. M.S. in Physical Education, 1984, 58 p. (M. W. Ford)

614. MC COLLUM, S. Differences between perceived strength of the competition and state anxiety of softball players. M.S. in Physical Education, 1984, 50 p. (M. R. Griffin)

137 college women (ages 18-22) softball team members were tested using the Spielberger (1983) STAT Form Y state anxiety scale and a perceived strength of competition scale. The athletes represented 10 schools and 6 states and were tested immediately prior to competition in interstate tournaments. Mean state anxiety scores were determined for the group which perceived the competition as strong and the group which percieved the competition as weak. A sig higher

(M = 36.69) state anxiety score was found in the group perceiving the competition as strong over those who considered it weak (M = 34.86). Various positions in softball appear to place additional pressure on athletes with pitchers showing a high (M = 43.4) and short-stops a low (M = 29.2) on state anxiety. The need for attention to anxiety coping skills at the intercollegiate level was indicated.

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